

Supplementary Information

GABA_A receptor-mediated seizure liabilities: A mixed-methods screening approach

Konstantina Bampali (1), Filip Koniuszewski[✉] (1), Florian D. Vogel (1), Jure Fabjan (1), Christos Andronis (2), Eftychia Lekka (2), Vassilis Virvillis (2), Thomas Seidel (3), Annie Delaunois (4), Leandro Royer (4), Michael G. Rolf (5), Chiara Giuliano (6), Martin Traebert (7), Gautier Roussignol (8), Magali Fric-Bordat (8), Ludmilla Mazelin-Winum (8), Sharon D. Bryant (9), Thierry Langer (3), Margot Ernst^{✉*} (1)

(1) Department of Pathobiology of the Nervous System, Center for Brain Research, Medical University Vienna, Spitalgasse 4, 1090 Vienna, Austria

(2) Biovista, 34 Rodopoleos Street, 16777, Athens, Greece

(3) Department of Pharmaceutical Sciences, Division of Pharmaceutical Chemistry, University of Vienna, Josef-Holaubek-Platz 2, 1090 Vienna, Austria

(4) UCB Biopharma SRL, Chemin du Foriest, Braine-l'Alleud, Belgium

(5) Astra Zeneca, R&D Biopharmaceuticals, Pepparedsleden 1, 431 83 Mölndal, Sweden

(6) Astra Zeneca, R&D Biopharmaceuticals, Fleming Building (B623), Babraham Research Park, Babraham, Cambridgeshire CB22 3AT, United Kingdom

(7) Novartis Institutes for Biomedical Research, Fabrikstrasse 2, CH-4056, Basel, Switzerland

(8) Preclinical safety, Sanofi R & D, Montpellier, France

(9) Inte:Ligand GmbH, Mariahilferstrasse 74B/11 1070 Vienna, Austria

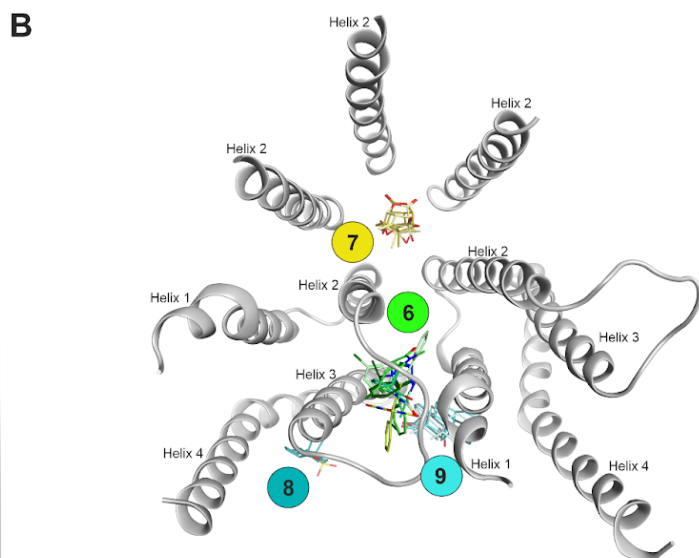
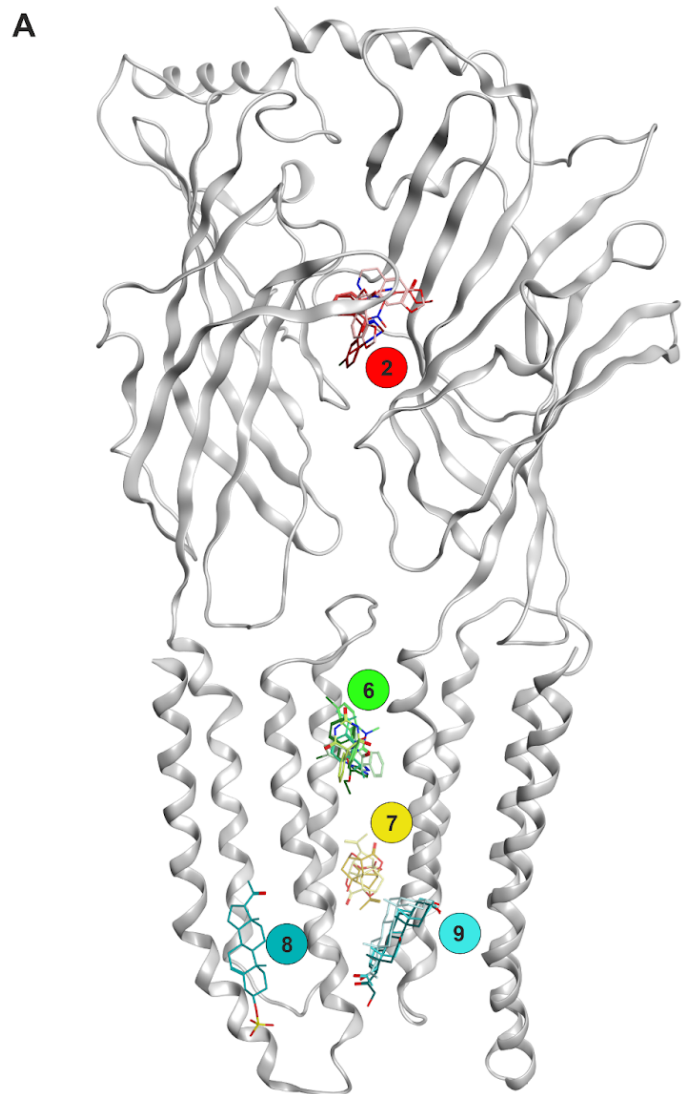
*Corresponding author – main contact: margot.ernst@meduniwien.ac.at, phone number: +43 1 40160 34065

[✉]These authors are shared corresponding authors

Nr	PDB ID	Protein	Ligand	Subunits	Puthenkalam et al., 2016	References	
1	5AFJ	AChBP	fragment 1	$\alpha 7$	1	Spurny et al., 2015	
2	5VDH *	Glycine	AM-3607	$\alpha 3+\alpha 3-$	-	Huang et al., 2017	
	6HJX *	ELIC	2-Ethanesulfonic acid		-	Henault et al., 2019	
3	6HUP	GABA-A	GABA	$\beta 3+\alpha 1-$	Site 1	Masiulis et al., 2019	
			Diazepam	$\alpha 1+\gamma 2-$			
	6HUO		GABA	$\beta 3+\alpha 1-$			
			Alprazolam	$\alpha 1+\gamma 2-$			
	6HUK *		Bicuculline methochloride	$\beta 3+\alpha 1-$			
	6A96		GABA	$\beta 3+\alpha 5-$			Liu et al., 2018
	6DW0, 6DW1		GABA	$\beta 1+\alpha 1-$			Phulera et al., 2018
	6DW0, 6DW1		GABA	$\alpha 1+\beta 1-$			
	6D6T, 6D6U		GABA	$\beta 2+\alpha 1-$			Zhu et al., 2018
			Flumazenil	$\alpha 1+\gamma 2-$			
	4COF		Benzamidine	$\beta 3+\beta 3-$			Miller and Aricescu., 2014
	6QFA		Histamine	$\beta 3+\beta 3-$			Uchanski et al., 2021
	7PC0		alpha-Cobratoxin	$\beta 3+\alpha 1-$			Kasaragod et al., 2022
	7QN9, 7QN8, 7QNC		histamine	$\beta 3+\beta 3-$			Sente et al., 2022
	7QND, 7QNC		gaboxadol	$\delta+\beta 3-$			Sente et al., 2022
	7QNB		GABA	$\beta 3+\gamma 2-$			Sente et al., 2022
	7QNE		Ro15-1413	$\alpha 1+\gamma 2-$			Sente et al., 2022
4TWF, 4TWD	ELIC	memantine, bromemantine	Ulens et al., 2014				
4F8H *	GLIC	Ketamine	Site 2	Pan et al., 2012a			
4	2YNG *	ELIC	Ba-Atom	Site 3	Zimmermann et al., 2012		
5	5LG3 *	ELIC	Chlorpromazine	$\beta 1-$	Site 5	Nys et al., 2016	
	5LID		Brompromazine				
	3ZKR		Br- atom				
6	5MUR *	GLIC	Propofol	Site 8	Sauguet et al., 2018		
	3P4W *	GLIC	Desflurane	Site 8	Nury et al., 2011		
L	6D6T, 6D6U *	GABA-A	Cholesterol	$\beta 2+$	-	Zhu et al., 2018	
7	6HUP *	GABA-A	Diazepam	$\beta 3+\alpha 1-$	Site 7	Masiulis et al., 2019	
	5MVM	GLIC	Propofol			Fourati et al., 2018	
	4HFE	GLIC	Ethanol			Sauget et al., 2013	
	6X3V	GABA-A	Etomidate	$\beta 2+\alpha 1-$		Kim et al., 2020	
	6X3T	GABA-A	Propofol				
	6X3W	GABA-A	Phenobarbital				
	6X3X	GABA-A	Diazepam	$\beta 2+\alpha 1-, \gamma 2+\beta 2-$			
5VDH *	alpha-3 Glycine	Avermectin	$\alpha 3+\alpha 3-$	Huang et al., 2017			
L	6D6T, 6D6U *	GABA-A	Cholesterol	$\beta 2+\alpha 1-$	-	Zhu et al., 2018	
L	6D6T *	GABA-A	Cholesterol	$\alpha 1-$	-	Zhu et al., 2018	
L	6D6T	GABA-A	Cholesterol	$\alpha 1+\beta 2-$	-	Zhu et al., 2018	
	5OSA *	GLIC-GABAAR alpha-1 chimera	Cholesterol Hemisuccinate	$\alpha 1+\alpha 1-$	-	Laverly et al., 2017	

L	6D6T, 6D6U *	GABA-A	Cholesterol	$\beta 2+\alpha 1-$	Site 7	Zhu et al., 2018
L	6D6T *	GABA-A	Cholesterol	$\alpha 1-$		Zhu et al., 2018
L	6D6T	GABA-A	Cholesterol	$\alpha 1+\beta 2-$		Zhu et al., 2018
	5OSA *	GLIC-GABAAR alpha-1 chimera	Cholesterol Hemisuccinate	$\alpha 1+\alpha 1-$		Laverty et al., 2017
8	6HUG, 6HUJ, 6X40 *	GABA-A	Picrotoxin	$\alpha \beta \alpha \beta$	-	Masiulis et al., 2019, Kim et al., 2020
	5MUO *	GLIC	Propofol		-	Sauget et al., 2018
L	6D6T, 6D6U *	GABA-A	Cholesterol *	$\beta 2+$	Site 10	Zhu et al., 2018
				$\alpha 1+$		
9	5OSC *	GLIC-GABAAR alpha-1 chimera	Pregnenolone Sulfate *	$\alpha 1+$		
L	3EAM *	GLIC	Lipid *			Bocquet et al., 2008
10	6CDU *	chimeric human alpha-1 GABAA	Alphaxalone *	$\alpha 1+\alpha 1-$	overlap with Site 9	Chen et al., 2018
	5O8F *	chimeric beta-3 alpha-5 GABAA	Pregnenolone *	$\alpha 5\beta 3$		Miller et al., 2017
	5OSB *	GLIC-GABAAR alpha-1 chimera	THDOC *	$\alpha 1+\alpha 1-$		Laverty et al., 2017
L	6D6T *	GABA-A	Cholesterol *	$\beta 2-$	Site 10	Zhu et al., 2018
L	6D6T, 6D6U *	GABA-A	Cholesterol *	$\alpha 1+\gamma 2-$	-	Zhu et al., 2018
L	6I53 *	GABA-A	PIP2 *	$\alpha 1+$	overlap with site 10	Laverty et al., 2019
	6HUO, 6HUK, 6HUJ, 6HUG, 6HUP					Masiulis et al., 2019
11	4TWD, 4TWF	ELIC	memantine, bromomemantine		-	Ukens et al., 2014

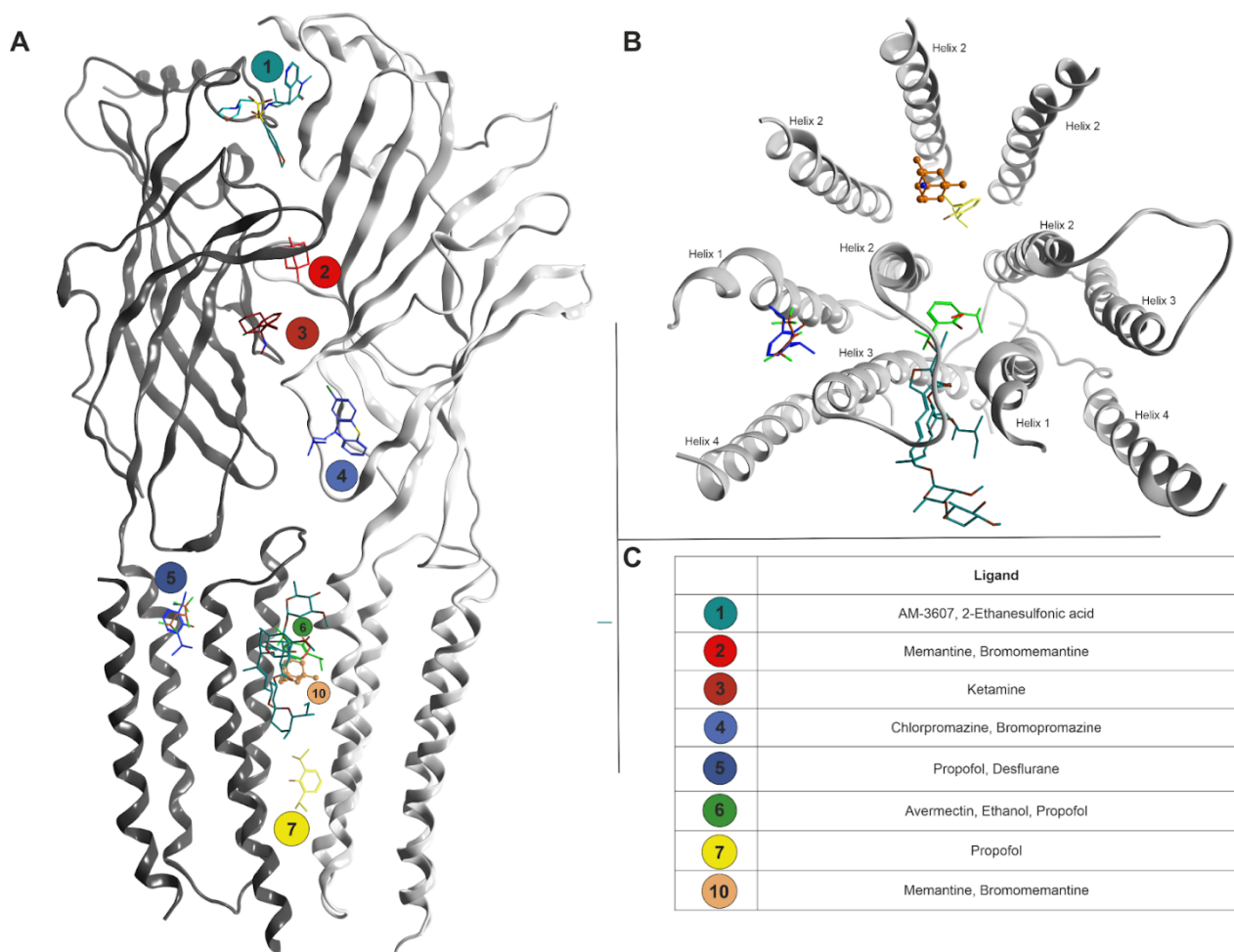
Supplementary Table S1: Overview of binding sites of GABA_A receptors, including homologous proteins as displayed in Figure 2. Binding sites were compared to Puthenkalam et al. and assigned to the new binding site nomenclature (Bocquet *et al.*, 2009; Nury *et al.*, 2011; Pan *et al.*, 2012; Zimmermann *et al.*, 2012; Sauguet *et al.*, 2013; Spurny *et al.*, 2013; Miller *et al.*, 2014; Ulens *et al.*, 2014; Spurny *et al.*, 2015; Nys *et al.*, 2016; Huang *et al.*, 2017; Laverty *et al.*, 2017; Miller *et al.*, 2017; Chen *et al.*, 2018; Fourati *et al.*, 2018; Liu *et al.*, 2018; Phulera *et al.*, 2018; Zhu *et al.*, 2018; Hénault *et al.*, 2019; Masiulis *et al.*, 2019; Kim *et al.*, 2020; Uchański *et al.*, 2021; Kasaragod *et al.*, 2022; Sente *et al.*, 2022; Zhu *et al.*, 2022). Numbers correspond to Figure 2, “L” stands for “lipid or cholesterol derived ligand”.



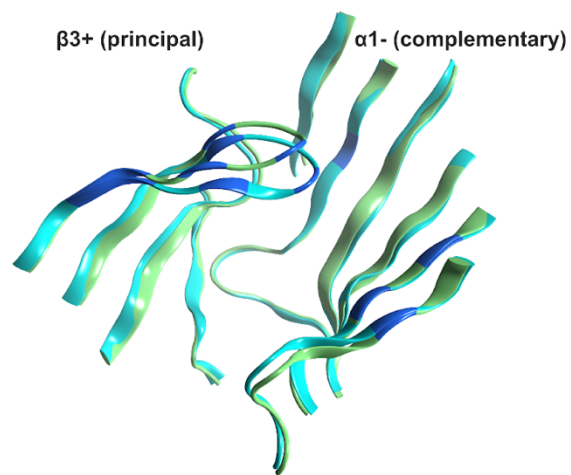
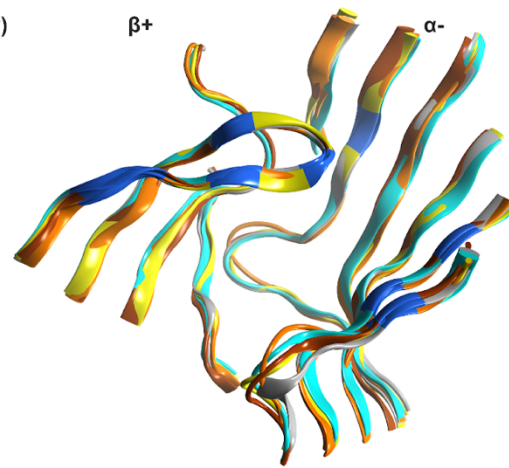
C

	Ligand
2	GABA, Diazepam, Alprazolam, Flumazenil, Bicuculline methochloride, histamine, α -Cobratoxin
6	Diazepam, Propofol, Etomidate, Phenobarbital
7	Picrotoxin
8	Pregnenolone Sulfate, PIP2, lipid
9	Alphaxalone, Pregnenolone, THDOC

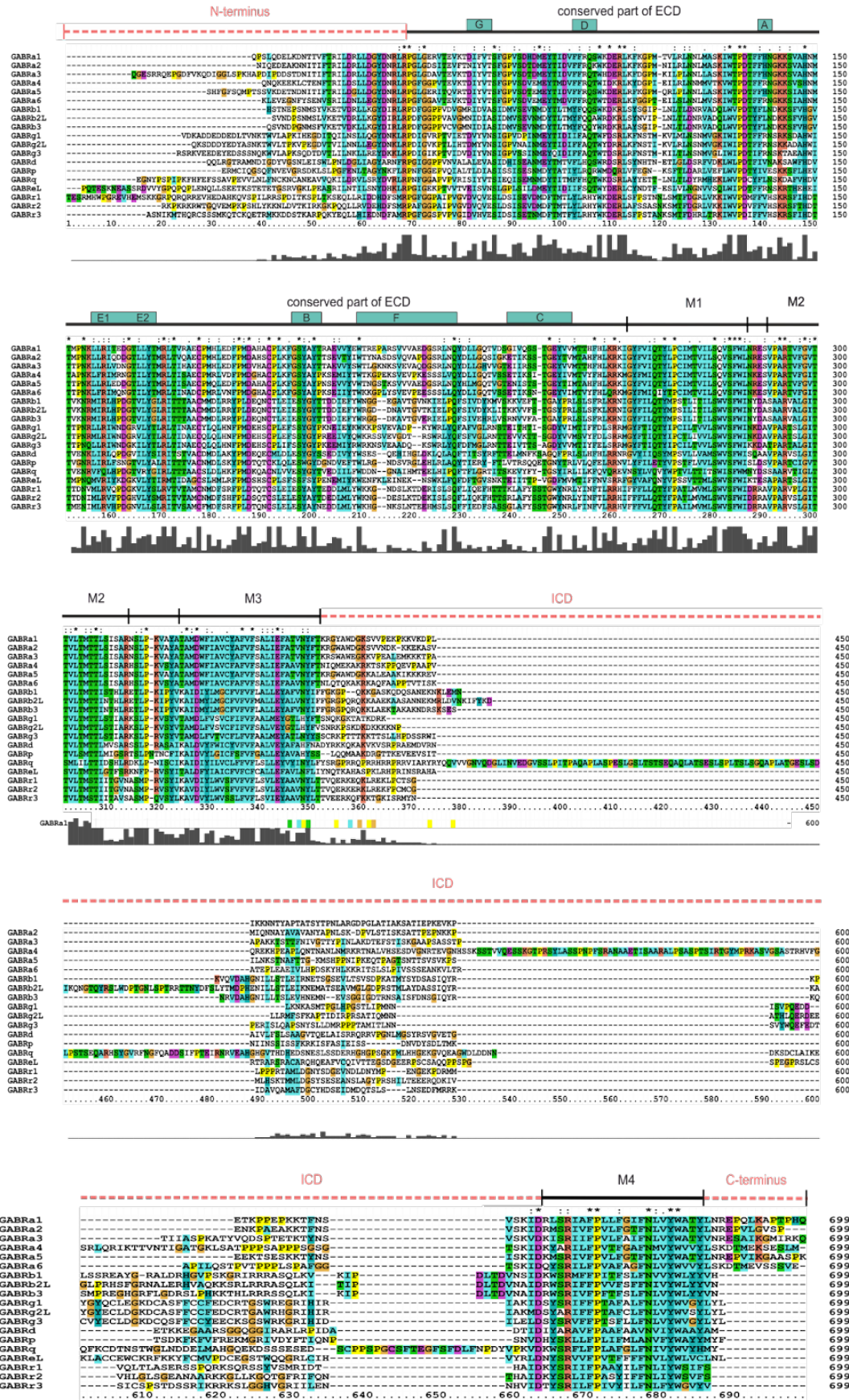
Supplementary Figure S1: Binding sites found in GABA_A receptor atomic resolution structures. (a) Side view and (b) top view of a superposition of the PDB files shown in (c). The ligands are represented in stick representation (GABA in red, diazepam in red for the ECD binding site (2), bicuculline methochloride in pink, flumazenil in red, diazepam in the TMD binding site (6) in light green, etomidate in green, phenobarbital in yellow-green, propofol in dark green, picrotoxin in yellow, alphaxalone in light cyan, THDOC in cyan, pregnanolone in dark cyan, pregnanolone sulfate in cyan). Binding sites are coloured and numbered according to their localization in the protein. Sites 2,6 and 9 are interface-located, whereas sites 8-9 are intrasubunit-located. Site 7 is located within the channel pore. (c) Table detailing all binding sites and their respective ligands. The corresponding binding site identification numbers reported in Puthenkalam *et. al.* are also depicted (Puthenkalam *et al.*, 2016).



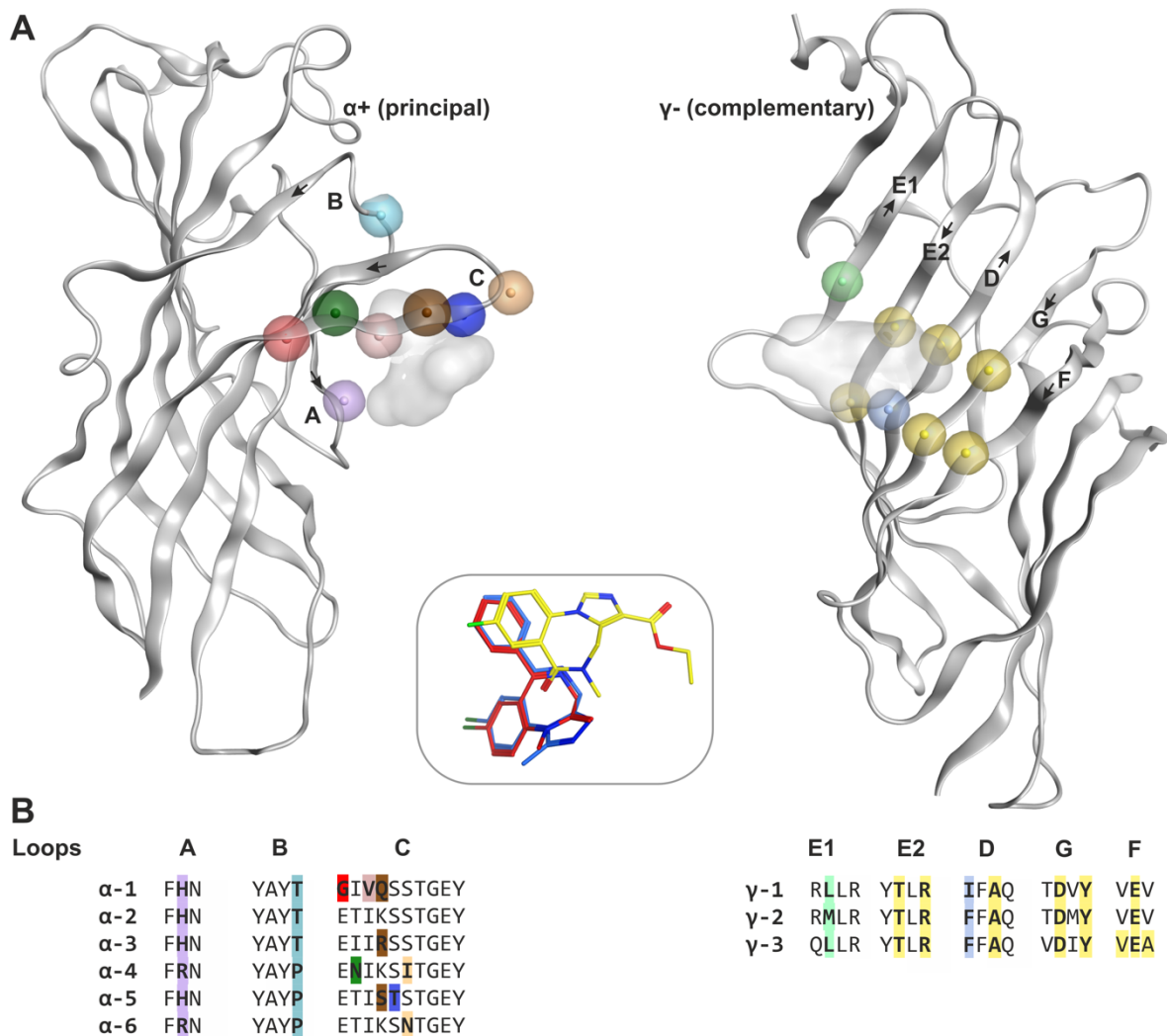
Supplementary Figure S2. Binding sites found in homologous GABA_A receptor atomic resolution structures. (a) Side view and (b) top view of a superposition of the protein data bank identities (PDB IDs) shown in (c). Two subunits of 6HUP are shown in grey ribbon representation. The ligands are represented in stick representation (AM-3607 in cyan, memantine in the ECD site (2) in red, ketamine in dark red, chlorpromazine in blue, propofol in dark blue, avermectin in green, propofol in the channel blocker site (7), memantine in the channel blocker site (10) in orange). Binding sites are coloured and numbered according to their localization in the protein. Sites 1-3 and 6 are interface-located, whereas sites 4, 5 are intrasubunit-located. Site 7 and 10 is located within the channel pore. (c) Table detailing all binding sites and their respective ligands and PDB IDs. The corresponding binding site identification numbers reported in Puthenkalam *et al.* are also depicted (Puthenkalam *et al.*, 2016). ECD: extracellular domain, TMD: transmembrane domain.

A**B**

Supplementary Figure S3: GABA binding site (A) Comparison of the bicuculline bound state (6HUK in green) and GABA/picrotoxin bound state (6HUJ in cyan). Highlighted blue residues are showing the different residues in the b1, b2 and b3 subunits as in Figure 3A and 3D. (B) Superposition of b1 (6DW0 in orange), b2 (6D6T in yellow) and b3 (6HUJ in cyan, 7QNA in grey, 6A96 in brown) principal site and a1 (6HUJ, 6DW0, 6D6T), a4 (7QNA) and a5 (6A96) complementary site.



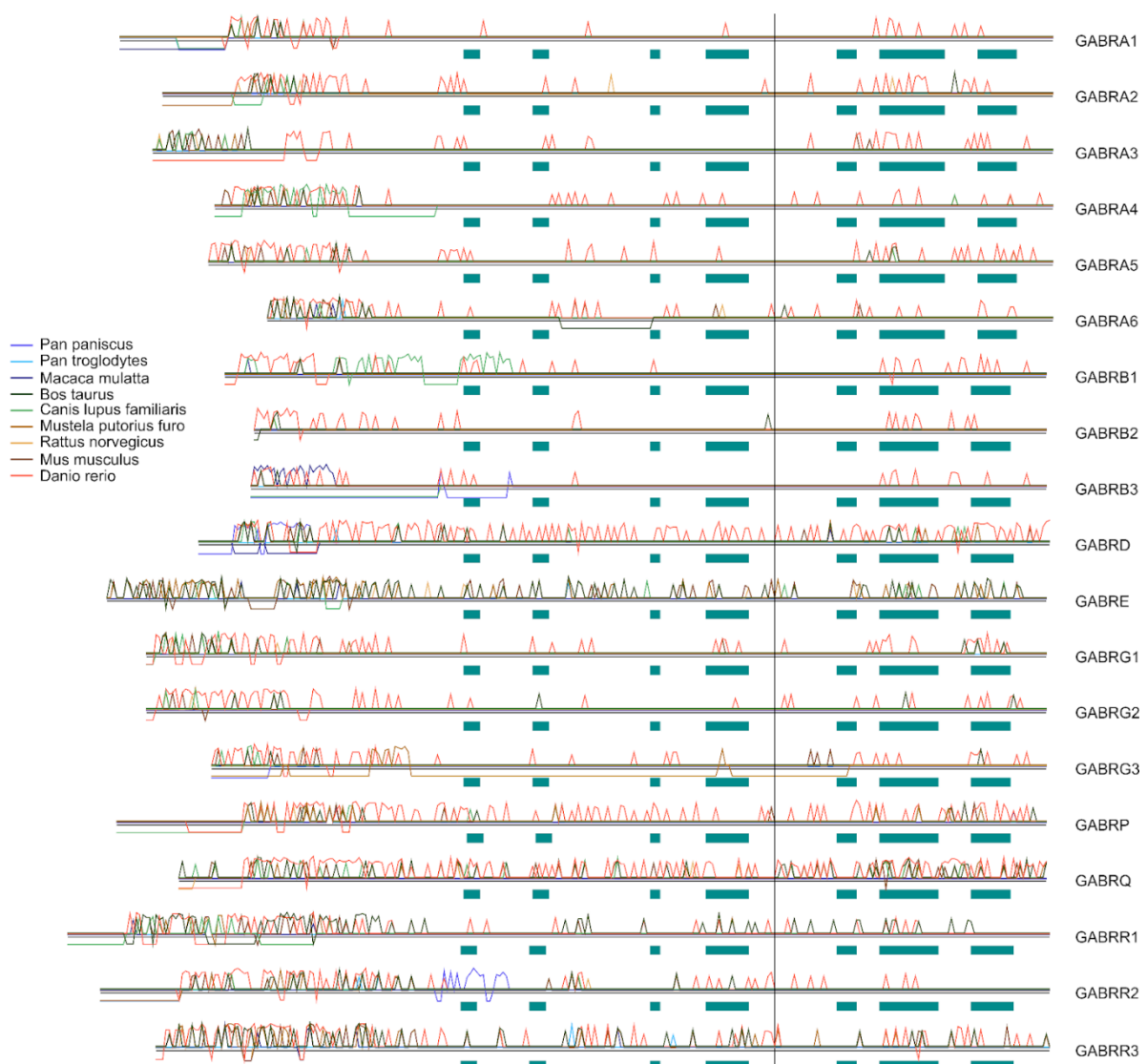
Supplementary Figure S4: Sequence alignment of the 19 human subunits with annotated segments A-G, M1-M4.



Supplementary Figure S5: ECD interface high affinity binding site for benzodiazepines: (A) Side view of the benzodiazepine binding site (α +/ γ - interface) from a PDBeFold superposition of selected atomic resolution structures (PDB IDs: 6HUP – diazepam, 6HUO – alprazolam, 6D6T/ 6D6U – flumazenil). The subunits are displayed individually to view also the deeper parts of the pocket. The direction of the beta strands is indicated by arrows on the ribbon. Ligands are displayed as shadows on the protein, for visualization purposes diazepam and alprazolam on the principal (+) side and flumazenil on the complementary (-) side. The insert box in the middle depicts the binding modes of diazepam (red), alprazolam (blue) and flumazenil (yellow). The coloured spheres on the ribbon rendering identify the variable positions, color matched with panel (B), on the so-called “loops” (segments) A-G. In loop A, highlighted in purple, are the amino acid differences between α 4,6 and α 1,2,3,5 subunits that render the former diazepam-insensitive (DI) and the latter diazepam-sensitive (DS). In loop B, highlighted in light blue, is the amino acid difference between α 4,5,6 and α 1,2,3 subunits that render the former zolpidem-insensitive (ZI) and the latter zolpidem-sensitive (ZS). Several differences are observed in loop C: Amino acid positions which are unique for any isoform are highlighted in different colors: in red and pink the unique amino acids of the α 1 subunit; in brown the amino acids which are unique for the α 1, α 3 and α 5 subunits, respectively; in dark blue the unique amino acid of the α 5 subunit and in light orange the amino acids unique to α 4 and α 6 subunits, respectively. On the complementary side of the pocket (γ -) the binding site contributing amino acids are highlighted: in yellow all the positions that are conserved in all three γ isoforms; in cyan the unique amino acid in the γ 1 subunit and in light green the unique amino acid in the γ 2 subunit. More variable positions are found on segment F (Supplementary Figure S4). (B) provides the partial alignment for the binding site forming segments, more loop F information is in S4.

Scientific name of species	Species
Homo sapiens	Human
Rattus norvegicus	Rat
Mus musculus	Mouse
Pan paniscus	Bonobo, historically called : pygmy chimpanzee
Pan troglodytes	Common chimpanzee
Mustela putorius furo	Ferret
Macaca mulatta	Rhesus macaque
Canis lupus familiaris	Domestic dog
Danio rerio	Zebrafish
Bos taurus	Cattle

Supplementary Table S2: Names of species that were used in this study for protein sequence comparisons.



Supplementary Figure S6: Overview of pairwise differences between the human subunits and nine orthologs in the ECD. Substitution scores are plotted for pairwise alignments between human sequences and their orthologs as described in the methods. The colors reflect the different species as indicated in the legend. Full alignments and the correspondences for Danio rerio (which lacks an epsilon subunit) are in Supplementary Figure S8. The upwards spikes correlate with the (normalized) substitution score for amino acid exchanges from the blosum90 matrix, and downwards deflections indicate insertions/deletions (INDELs). The score graphs are aligned along the cys-loop, the second cysteine is represented by the vertical bar. The binding site forming segments G, D, A, E, B, F and C (from N- to C-terminal) are indicated by cyan bars below the graph for each subunit.



Supplementary Figure S7: Overview of pairwise differences between the human subunits and nine orthologs in the TMD and ICD. Substitution scores are plotted for pairwise alignments between human sequences and their orthologs as described in the methods. The colors reflect the different species as indicated in the legend. Full alignments and the correspondences for *Danio rerio* (which lacks an epsilon subunit) are in Supplementary Figure S8. The upwards spikes correlate with the (normalized) substitution score for amino acid exchanges from the blosum90 matrix, and downwards deflections indicate INDELs. The score graphs are aligned at the beginning of TM1, the four TM segments are indicated by red bars below each score graph.

The next pages provide per subunit alignments from up to 10 species as Supplementary Figure S8

P14867|GABRA1_Homo_sapiens -----MRKSPGLSDCLWAWILLLST--LTGRSYGQPSLODELKDNTVVFTRILDRLLDGYDNRLRPGLGERV 65
A0A2R9AU65|GABRA1_Pan_paniscus -----MVQVSIASNELLOPAMRKSPGLSDCLWAWILLLST--LTGRSYGQPSLODELKDNTVVFTRILDRLLDGYDNRLRPGLGERV 80
A0A2I3SDV7|GABRA1_Pan_troglodytes -----MVQVSIASNELLOPAMRKSPGLSDCLWAWILLLST--LTGRSYGQPSLODELKDNTVVFTRILDRLLDGYDNRLRPGLGERV 80
A0A1D5Q406|GABRA1_Macaca_mulatta MFLNGEMEGKVENGWSRFPPLLPMRCHIPLLOPAMRKSPGLSDYLWAWILLLST--LTGRSYGQPSLODELKDNTVVFTRILDRLLDGYDNRLRPGLGERV 98
M3YP62|GABRA1_Mustela_putorius_furo -----MKKSPGFSEYLAWAWILLLST--LTGRSYGQPSLODELKDNTVVFTRILDRLLDGYDNRLRPGLGERV 65
P62813|GABRA1_Rattus_norvegicus -----MKKSRGLSDYLWAWILLLST--LSGRSYGQPSLODELKDNTVVFTRILDRLLDGYDNRLRPGLGERV 64
P62812|GABRA1_Mus_musculus -----MKKSRGLSDYLWAWILLLST--LSGRSYGQPSLODELKDNTVVFTRILDRLLDGYDNRLRPGLGERV 64
E2RSP8|GABRA1_Canis_lupus_familiaris -----MVQVSIASNELHKPAMKSLGLSDYLWAWILLLST--LTGRSYGQPSLODELKDNTVVFTRILDRLLDGYDNRLRPGLGERV 80
Q08BJ3|GABRA1_Danio_rerio -----MMWGGRG-AAWLWIWACLVTNALAGKSSNA--DEQKDNNTVVFTRILDRLLDGYDNRLRPGLGERV 65
P08219|GABRA1_Bos_taurus -----MKKSPGLSDYLWAWILLLST--LTGRSYGQPSLODELKDNTVVFTRILDRLLDGYDNRLRPGLGERV 65
1.....10.....20.....30.....40.....50.....60.....70.....80.....90.....100

*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****
P14867|GABRA1_Homo_sapiens TEVKTDIFVTSFGPVSDDHMEYTDIDVFFRQSWKDERLKFKGPMTVLRLNNLMASKIWTPTDFFHNKKSVAHNMTMPNKLRLITEDGTLTYMRLTVRAE 165
A0A2R9AU65|GABRA1_Pan_paniscus TEVKTDIFVTSFGPVSDDHMEYTDIDVFFRQSWKDERLKFKGPMTVLRLNNLMASKIWTPTDFFHNKKSVAHNMTMPNKLRLITEDGTLTYMRLTVRAE 180
A0A2I3SDV7|GABRA1_Pan_troglodytes TEVKTDIFVTSFGPVSDDHMEYTDIDVFFRQSWKDERLKFKGPMTVLRLNNLMASKIWTPTDFFHNKKSVAHNMTMPNKLRLITEDGTLTYMRLTVRAE 180
A0A1D5Q406|GABRA1_Macaca_mulatta TEVKTDIFVTSFGPVSDDHMEYTDIDVFFRQSWKDERLKFKGPMTVLRLNNLMASKIWTPTDFFHNKKSVAHNMTMPNKLRLITEDGTLTYMRLTVRAE 198
M3YP62|GABRA1_Mustela_putorius_furo TEVKTDIFVTSFGPVSDDHMEYTDIDVFFRQSWKDERLKFKGPMTVLRLNNLMASKIWTPTDFFHNKKSVAHNMTMPNKLRLITEDGTLTYMRLTVRAE 165
P62813|GABRA1_Rattus_norvegicus TEVKTDIFVTSFGPVSDDHMEYTDIDVFFRQSWKDERLKFKGPMTVLRLNNLMASKIWTPTDFFHNKKSVAHNMTMPNKLRLITEDGTLTYMRLTVRAE 164
P62812|GABRA1_Mus_musculus TEVKTDIFVTSFGPVSDDHMEYTDIDVFFRQSWKDERLKFKGPMTVLRLNNLMASKIWTPTDFFHNKKSVAHNMTMPNKLRLITEDGTLTYMRLTVRAE 164
E2RSP8|GABRA1_Canis_lupus_familiaris TEVKTDIFVTSFGPVSDDHMEYTDIDVFFRQSWKDERLKFKGPMTVLRLNNLMASKIWTPTDFFHNKKSVAHNMTMPNKLRLITEDGTLTYMRLTVRAE 180
Q08BJ3|GABRA1_Danio_rerio TEVKTDIFVTSFGPVSDDHMEYTDIDVFFRQSWKDERLKFKGPMTVLRLNNLMASKIWTPTDFFHNKKSVAHNMTMPNKLRLITEDGTLTYMRLTVRAE 165
P08219|GABRA1_Bos_taurus TEVKTDIFVTSFGPVSDDHMEYTDIDVFFRQSWKDERLKFKGPMTVLRLNNLMASKIWTPTDFFHNKKSVAHNMTMPNKLRLITEDGTLTYMRLTVRAE 165
.....110.....120.....130.....140.....150.....160.....170.....180.....190.....200

*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****
P14867|GABRA1_Homo_sapiens CPMHLEDFPMDAHACPLKFGSYAYTRADEVVYEWTRPARSVVVAEDGSRLNQYDLLGQTVDSGIVOSSTGEYVVMTHFHLKRRKIGYFVIQTYLPCIMTV 265
A0A2R9AU65|GABRA1_Pan_paniscus CPMHLEDFPMDAHACPLKFGSYAYTRADEVVYEWTRPARSVVVAEDGSRLNQYDLLGQTVDSGIVOSSTGEYVVMTHFHLKRRKIGYFVIQTYLPCIMTV 280
A0A2I3SDV7|GABRA1_Pan_troglodytes CPMHLEDFPMDAHACPLKFGSYAYTRADEVVYEWTRPARSVVVAEDGSRLNQYDLLGQTVDSGIVOSSTGEYVVMTHFHLKRRKIGYFVIQTYLPCIMTV 280
A0A1D5Q406|GABRA1_Macaca_mulatta CPMHLEDFPMDAHACPLKFGSYAYTRADEVVYEWTRPARSVVVAEDGSRLNQYDLLGQTVDSGIVOSSTGEYVVMTHFHLKRRKIGYFVIQTYLPCIMTV 298
M3YP62|GABRA1_Mustela_putorius_furo CPMHLEDFPMDAHACPLKFGSYAYTRADEVVYEWTRPARSVVVAEDGSRLNQYDLLGQTVDSGIVOSSTGEYVVMTHFHLKRRKIGYFVIQTYLPCIMTV 265
P62813|GABRA1_Rattus_norvegicus CPMHLEDFPMDAHACPLKFGSYAYTRADEVVYEWTRPARSVVVAEDGSRLNQYDLLGQTVDSGIVOSSTGEYVVMTHFHLKRRKIGYFVIQTYLPCIMTV 264
P62812|GABRA1_Mus_musculus CPMHLEDFPMDAHACPLKFGSYAYTRADEVVYEWTRPARSVVVAEDGSRLNQYDLLGQTVDSGIVOSSTGEYVVMTHFHLKRRKIGYFVIQTYLPCIMTV 264
E2RSP8|GABRA1_Canis_lupus_familiaris CPMHLEDFPMDAHACPLKFGSYAYTRADEVVYEWTRPARSVVVAEDGSRLNQYDLLGQTVDSGIVOSSTGEYVVMTHFHLKRRKIGYFVIQTYLPCIMTV 280
Q08BJ3|GABRA1_Danio_rerio CPMHLEDFPMDAHACPLKFGSYAYTRADEVVYVWTRGAAQSVVVADDSRLNQYDLMOQSVDSGIVOSSTGEYVVMTHFHLKRRKIGYFVIQTYLPCIMTV 265
P08219|GABRA1_Bos_taurus CPMHLEDFPMDAHACPLKFGSYAYTRADEVVYEWTRPARSVVVAEDGSRLNQYDLLGQTVDSGIVOSSTGEYVVMTHFHLKRRKIGYFVIQTYLPCIMTV 265
.....210.....220.....230.....240.....250.....260.....270.....280.....290.....300

*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****
P14867|GABRA1_Homo_sapiens ILSQVSFWLNRESVSPARTVFGVTVLTMTLTSLISARNSLPKVAYATAMDWFIACVAFVFSALIEFATVNYFTKRGYAWDGKSVVPEKPKVKDPLIKKN 365
A0A2R9AU65|GABRA1_Pan_paniscus ILSQVSFWLNRESVSPARTVFGVTVLTMTLTSLISARNSLPKVAYATAMDWFIACVAFVFSALIEFATVNYFTKRGYAWDGKSVVPEKPKVKDPLIKKN 380
A0A2I3SDV7|GABRA1_Pan_troglodytes ILSQVSFWLNRESVSPARTVFGVTVLTMTLTSLISARNSLPKVAYATAMDWFIACVAFVFSALIEFATVNYFTKRGYAWDGKSVVPEKPKVKDPLIKKN 380
A0A1D5Q406|GABRA1_Macaca_mulatta ILSQVSFWLNRESVSPARTVFGVTVLTMTLTSLISARNSLPKVAYATAMDWFIACVAFVFSALIEFATVNYFTKRGYAWDGKSVVPEKPKVKDPLIKKN 398
M3YP62|GABRA1_Mustela_putorius_furo ILSQVSFWLNRESVSPARTVFGVTVLTMTLTSLISARNSLPKVAYATAMDWFIACVAFVFSALIEFATVNYFTKRGYAWDGKSVVPEKPKVKDPLIKKN 365
P62813|GABRA1_Rattus_norvegicus ILSQVSFWLNRESVSPARTVFGVTVLTMTLTSLISARNSLPKVAYATAMDWFIACVAFVFSALIEFATVNYFTKRGYAWDGKSVVPEKPKVKDPLIKKN 364
P62812|GABRA1_Mus_musculus ILSQVSFWLNRESVSPARTVFGVTVLTMTLTSLISARNSLPKVAYATAMDWFIACVAFVFSALIEFATVNYFTKRGYAWDGKSVVPEKPKVKDPLIKKN 364
E2RSP8|GABRA1_Canis_lupus_familiaris ILSQVSFWLNRESVSPARTVFGVTVLTMTLTSLISARNSLPKVAYATAMDWFIACVAFVFSALIEFATVNYFTKRGYAWDGKSVVPEKPKVKDPLIKKN 380
Q08BJ3|GABRA1_Danio_rerio ILSQVSFWLNRESVSPARTVFGVTVLTMTLTSLISARNSLPKVAYATAMDWFIACVAFVFSALIEFATVNYFTKRGYAWDGKSVVPEKPKVKKESLKKN 365
P08219|GABRA1_Bos_taurus ILSQVSFWLNRESVSPARTVFGVTVLTMTLTSLISARNSLPKVAYATAMDWFIACVAFVFSALIEFATVNYFTKRGYAWDGKSVVPEKPKVKDPLIKKN 365
.....310.....320.....330.....340.....350.....360.....370.....380.....390.....400

::***:***:***:***:***:***:***:***:***:***:***:***:***:***
P14867|GABRA1_Homo_sapiens NTY-APTATSYTPNLARGDPGLATIAKSATIEPKEVK--PETKPEPKKTFNSVSKIDRLSRIAPLLFGIFNLVYWATYLNREPOLKAPT--PHQ 456
A0A2R9AU65|GABRA1_Pan_paniscus NTY-APTATSYTPNLARGDPGLATIAKSATIEPKEVK--PETKPEPKKTFNSVSKIDRLSRIAPLLFGIFNLVYWATYLNREPOLKAPT--PHQ 471
A0A2I3SDV7|GABRA1_Pan_troglodytes NTY-APTATSYTPNLARGDPGLATIAKSATIEPKEVK--PETKPEPKKTFNSVSKIDRLSRIAPLLFGIFNLVYWATYLNREPOLKAPT--PHQ 471
A0A1D5Q406|GABRA1_Macaca_mulatta NTY-APTATSYTPNLARGDPGLATIAKSATIEPKEVK--PETKPEPKKTFNSVSKIDRLSRIAPLLFGIFNLVYWATYLNREPOLKAPT--PHQ 489
M3YP62|GABRA1_Mustela_putorius_furo NTY-APTATSYTPNLARGDPGLATIAKSATIEPKEVK--PETKPEPKKTFNSVSKIDRLSRIAPLLFGIFNLVYWATYLNREPOLKAPT--PHQ 456
P62813|GABRA1_Rattus_norvegicus NTY-APTATSYTPNLARGDPGLATIAKSATIEPKEVK--PETKPEPKKTFNSVSKIDRLSRIAPLLFGIFNLVYWATYLNREPOLKAPT--PHQ 455
P62812|GABRA1_Mus_musculus NTY-APTATSYTPNLARGDPGLATIAKSATIEPKEVK--PETKPEPKKTFNSVSKIDRLSRIAPLLFGIFNLVYWATYLNREPOLKAPT--PHQ 455
E2RSP8|GABRA1_Canis_lupus_familiaris NTY-APTATSYTPNLARGDPGLATIAKSATIEPKEVK--PETKPEPKKTFNSVSKIDRLSRIAPLLFGIFNLVYWATYLNREPOLKAPT--PHQ 471
Q08BJ3|GABRA1_Danio_rerio NTYTAATATAFAPNIAI--DPGLATIAKSAPPPTEPKKPKPKPAKKTFFNSVSKIDRIARAFPLFGIFNLVYWATYLNKKPKLQGMNLQPH- 459
P08219|GABRA1_Bos_taurus NTY-APTATSYTPNLARGDPGLATIAKSATIEPKEVK--PETKPEPKKTFNSVSKIDRLSRIAPLLFGIFNLVYWATYLNREPOLKAPT--PHQ 456
.....410.....420.....430.....440.....450.....460.....470.....480.....490.....

:..*. : * . * *****:*****:*** *:*****

P47869|GABRA2_Homo sapiens -----MKTKLNINMQFLLFVFLVWDPARLVLANIQEDEAKNNITIFTRILDRLLDGYDNRLRPLGLGDSITEVFTNIYVTSFG 78
XP_003816076.1|GABRA2_Pan_paniscus -----MKTKLNINMQFLLFVFLVWDPARLVLANIQEDEAKNNITIFTRILDRLLDGYDNRLRPLGLGDSITEVFTNIYVTSFG 78
M3Y0V9|GABRA2_Mustela putorius furo MVQLNVILSVFYFSCMALQRAAMKTKLNTYNVQLLLLVFLVWDPARLVLANIQEDEAKNNITIFTRILDRLLDGYDNRLRPLGLGDSITEVFTNIYVTSFG 100
P23576|GABRA2_Rattus norvegicus -----MRTKLSTCNVWFLPLLVLLVWNPARLVLANIQEDEAKNNITIFTRILDRLLDGYDNRLRPLGLGDSITEVFTNIYVTSFG 78
P26048|GABRA2_Mus musculus -----MKTKLNINMQFLLFVFLVWDPARLVLANIQEDEAKNNITIFTRILDRLLDGYDNRLRPLGLGDSITEVFTNIYVTSFG 78
AOA5F4CYJ7|GABRA2_Canis lupus familiaris -----MRLLLLVFLVWDPARLVLANIQEDEAKNNITIFTRILDRLLDGYDNRLRPLGLGDSITEVFTNIYVTSFG 69
H2QPE5|GABRA2_Pan troglodytes -----MKTKLNINMQFLLFVFLVWDPARLVLANIQEDEAKNNITIFTRILDRLLDGYDNRLRPLGLGDSITEVFTNIYVTSFG 78
E7F635|GABRA2a_Danio rerio -----MILRRGHSHGFLIHLFLVLVW-RACEAEVSGSDFAKNNITLFTIRLDRLLDGYDNRLRPLGLGDRVTEVKTDIYVTSFG 78
XP_028703913.1|GABRA2_Macaca mulatta -----MKTKLNINMQFLLFVFLVWDPARLVLANIQEDEAKNNITIFTRILDRLLDGYDNRLRPLGLGDSITEVFTNIYVTSFG 78
P10063|GABRA2_Bos taurus -----MKTKLNSNMQLLLFVFLVWDPARLVLANIQEDEAKNNITIFTRILDRLLDGYDNRLRPLGLGDSITEVFTNIYVTSFG 78
1.....10.....20.....30.....40.....50.....60.....70.....80.....90.....100

*****:*****:*****:***** *****:***** *****:***** *****:***** *****:***** *****:***** *****:***** *****:***** *****:*****

P47869|GABRA2_Homo sapiens PVSDTDMEYITDVFFRQKWKDERLKFQKPMNILRLNNLMASKIWPDPDTFFHNGKKSVAHNMTMPNKLRLRIQDDGTLTYMRLTVAQECPMHLEDFFPMDAH 178
XP_003816076.1|GABRA2_Pan_paniscus PVSDTDMEYITDVFFRQKWKDERLKFQKPMNILRLNNLMASKIWPDPDTFFHNGKKSVAHNMTMPNKLRLRIQDDGTLTYMRLTVAQECPMHLEDFFPMDAH 178
M3Y0V9|GABRA2_Mustela putorius furo PVSDTDMEYITDVFFRQKWKDERLKFQKPMNILRLNNLMASKIWPDPDTFFHNGKKSVAHNMTMPNKLRLRIQDDGTLTYMRLTVAQECPMHLEDFFPMDAH 200
P23576|GABRA2_Rattus norvegicus PVSDTDMEYITDVFFRQKWKDERLKFQKPMNILRLNNLMASKIWPDPDTFFHNGKKSVAHNMTMPNKLRLRIQDDGTLTYMRLTVAQECPMHLEDFFPMDAH 178
P26048|GABRA2_Mus musculus PVSDTDMEYITDVFFRQKWKDERLKFQKPMNILRLNNLMASKIWPDPDTFFHNGKKSVAHNMTMPNKLRLRIQDDGTLTYMRLTVAQECPMHLEDFFPMDAH 178
AOA5F4CYJ7|GABRA2_Canis lupus familiaris PVSDTDMEYITDVFFRQKWKDERLKFQKPMNILRLNNLMASKIWPDPDTFFHNGKKSVAHNMTMPNKLRLRIQDDGTLTYMRLTVAQECPMHLEDFFPMDAH 169
H2QPE5|GABRA2_Pan troglodytes PVSDTDMEYITDVFFRQKWKDERLKFQKPMNILRLNNLMASKIWPDPDTFFHNGKKSVAHNMTMPNKLRLRIQDDGTLTYMRLTVAQECPMHLEDFFPMDAH 178
E7F635|GABRA2a_Danio rerio PVSDTDMEYITDVFFRQKWKDERLKFQKPMNILRLNNLMASKIWPDPDTFFHNGKKSVAHNMTMPNKLRLRIMENGTLLTYMRLTVAQECPMHLEDFFPMDAH 178
XP_028703913.1|GABRA2_Macaca mulatta PVSDTDMEYITDVFFRQKWKDERLKFQKPMNILRLNNLMASKIWPDPDTFFHNGKKSVAHNMTMPNKLRLRIQDDGTLTYMRLTVAQECPMHLEDFFPMDAH 178
P10063|GABRA2_Bos taurus PVSDTDMEYITDVFFRQKWKDERLKFQKPMNILRLNNLMASKIWPDPDTFFHNGKKSVAHNMTMPNKLRLRIQDDGTLTYMRLTVAQECPMHLEDFFPMDAH 178
.....110.....120.....130.....140.....150.....160.....170.....180.....190.....200

*****:*****:*****:***** *****:***** *****:***** *****:***** *****:***** *****:***** *****:***** *****:***** *****:*****

P47869|GABRA2_Homo sapiens SCPLKFGSYAYTTSEVYIWTYNASDSVQVAPDGSRLNQYDLLGQSIGKETIKSSTGEYTVMTAHFHLKRKIGYFVIQTYLPCIMTVILSQVSWFLNRES 278
XP_003816076.1|GABRA2_Pan_paniscus SCPLKFGSYAYTTSEVYIWTYNASDSVQVAPDGSRLNQYDLLGQSIGKETIKSSTGEYTVMTAHFHLKRKIGYFVIQTYLPCIMTVILSQVSWFLNRES 278
M3Y0V9|GABRA2_Mustela putorius furo SCPLKFGSYAYTTSEVYIWTYNASDSVQVAPDGSRLNQYDLLGQSIGKETIKSSTGEYTVMTAHFHLKRKIGYFVIQTYLPCIMTVILSQVSWFLNRES 300
P23576|GABRA2_Rattus norvegicus SCPLKFGSYAYTTSEVYIWTYNASDSVQVAPDGSRLNQYDLLGQSIGKETIKSSTGEYTVMTAHFHLKRKIGYFVIQTYLPCIMTVILSQVSWFLNRES 278
P26048|GABRA2_Mus musculus SCPLKFGSYAYTTSEVYIWTYNASDSVQVAPDGSRLNQYDLLGQSIGKETIKSSTGEYTVMTAHFHLKRKIGYFVIQTYLPCIMTVILSQVSWFLNRES 278
AOA5F4CYJ7|GABRA2_Canis lupus familiaris SCPLKFGSYAYTTSEVYIWTYNASDSVQVAPDGSRLNQYDLLGQSIGKETIKSSTGEYTVMTAHFHLKRKIGYFVIQTYLPCIMTVILSQVSWFLNRES 269
H2QPE5|GABRA2_Pan troglodytes SCPLKFGSYAYTTSEVYIWTYNASDSVQVAPDGSRLNQYDLLGQSIGKETIKSSTGEYTVMTAHFHLKRKIGYFVIQTYLPCIMTVILSQVSWFLNRES 278
E7F635|GABRA2a_Danio rerio SCPLKFGSYAYTTSEVYIWTYNASDSVQVAPDGSRLNQYDLMGQTVGKETIKSSTGEYTVMTAHFHLKRKIGYFVIQTYLPCIMTVILSQVSWFLNRES 278
XP_028703913.1|GABRA2_Macaca mulatta SCPLKFGSYAYTTSEVYIWTYNASDSVQVAPDGSRLNQYDLLGQSIGKETIKSSTGEYTVMTAHFHLKRKIGYFVIQTYLPCIMTVILSQVSWFLNRES 278
P10063|GABRA2_Bos taurus SCPLKFGSYAYTTSEVYIWTYNASDSVQVAPDGSRLNQYDLPQSIGKETIKSSTGEYTVMTAHFHLKRKIGYFVIQTYLPCIMTVILSQVSWFLNRES 278
.....210.....220.....230.....240.....250.....260.....270.....280.....290.....300

*****:*****:*****:***** *****:***** *****:***** *****:***** *****:***** *****:***** *****:***** *****:***** *****:*****

P47869|GABRA2_Homo sapiens VPARTVFGVTTVLTMTTILSISARNSLPKVAYATAMDWFIACVYAFVFSALIEFATVNYFTKRGAWDGKSVVNDKKEKASVMIQNNAYAVAVANYAPNL 378
XP_003816076.1|GABRA2_Pan_paniscus VPARTVFGVTTVLTMTTILSISARNSLPKVAYATAMDWFIACVYAFVFSALIEFATVNYFTKRGAWDGKSVVNDKKEKASVMIQNNAYAVAVANYAPNL 378
M3Y0V9|GABRA2_Mustela putorius furo VPARTVFGVTTVLTMTTILSISARNSLPKVAYATAMDWFIACVYAFVFSALIEFATVNYFTKRGAWDGKSVVNDKKEKASVMIQNNAYAVAVANYAPNL 400
P23576|GABRA2_Rattus norvegicus VPARTVFGVTTVLTMTTILSISARNSLPKVAYATAMDWFIACVYAFVFSALIEFATVNYFTKRGAWDGKSVVNDKKEKASVMIQNNAYAVAVANYAPNL 378
P26048|GABRA2_Mus musculus VPARTVFGVTTVLTMTTILSISARNSLPKVAYATAMDWFIACVYAFVFSALIEFATVNYFTKRGAWDGKSVVNDKKEKASVMIQNNAYAVAVANYAPNL 378
AOA5F4CYJ7|GABRA2_Canis lupus familiaris VPARTVFGVTTVLTMTTILSISARNSLPKVAYATAMDWFIACVYAFVFSALIEFATVNYFTKRGAWDGKSVVNDKKEKASVMIQNNAYAVAVANYAPNL 369
H2QPE5|GABRA2_Pan troglodytes VPARTVFGVTTVLTMTTILSISARNSLPKVAYATAMDWFIACVYAFVFSALIEFATVNYFTKRGAWDGKSVVNDKKEKASVMIQNNAYAVAVANYAPNL 378
E7F635|GABRA2a_Danio rerio VPARTVFGVTTVLTMTTILSISARNSLPKVAYATAMDWFIACVYAFVFSALIEFATVNYFTKRGAWDGKSVVNDKKEKASVMIQNNAYAVAVANYAPHI 377
XP_028703913.1|GABRA2_Macaca mulatta VPARTVFGVTTVLTMTTILSISARNSLPKVAYATAMDWFIACVYAFVFSALIEFATVNYFTKRGAWDGKSVVNDKKEKASVMIQNNAYAVAVANYAPNL 378
P10063|GABRA2_Bos taurus VPARTVFGVTTVLTMTTILSISARNSLPKVAYATAMDWFIACVYAFVFSALIEFATVNYFTKRGAWDGKSVVNDKKEKASVMIQNNAYAVAVANYAPNL 378
.....310.....320.....330.....340.....350.....360.....370.....380.....390.....400

:*.*.*:**** *****. *. : * :*****:*****:*****:***** *****:***** *****:***** *****:***** *****:***** *****:*****

P47869|GABRA2_Homo sapiens SKDPVLTSTISKSATTPENKPKPENKPAEAKKTFNSVSKIDRMSRIVFPVLFGLFNLVYWATYLNREPVL-GVSP-- 451
XP_003816076.1|GABRA2_Pan_paniscus SKDPVLTSTISKSATTPENKPKPENKPAEAKKTFNSVSKIDRMSRIVFPVLFGLFNLVYWATYLNREPVL-GVSP-- 451
M3Y0V9|GABRA2_Mustela putorius furo SKDPVLTSTISKSATTPENKPKPENKPAEAKKTFNSVSKIDRMSRIVFPVLFGLFNLVYWATYLNREPVL-GVSP-- 473
P23576|GABRA2_Rattus norvegicus SKDPVLTSTISKSATTPENKPKPENKPAEAKKTFNSVSKIDRMSRIVFPVLFGLFNLVYWATYLNREPVL-GVSP-- 451
P26048|GABRA2_Mus musculus SKDPVLTSTISKSATTPENKPKPENKPAEAKKTFNSVSKIDRMSRIVFPVLFGLFNLVYWATYLNREPVL-GVSP-- 451
AOA5F4CYJ7|GABRA2_Canis lupus familiaris SKDPVLTSTISKSATTPENKPKPENKPAEAKKTFNSVSKIDRMSRIVFPVLFGLFNLVYWATYLNREPVL-GVSP-- 442
H2QPE5|GABRA2_Pan troglodytes SKDPVLTSTISKSATTPENKPKPENKPAEAKKTFNSVSKIDRMSRIVFPVLFGLFNLVYWATYLNREPVL-GVSP-- 451
E7F635|GABRA2a_Danio rerio AKDSALPTVSKSA-TPEPS-KAQPVAKETKKTFNSVSKIDRMSRIIFPVLFGLFNLVYWATYLNREPVIKMNVPSP 451
XP_028703913.1|GABRA2_Macaca mulatta SKDPVLTSTISKSATTPENKPKPENKPAEAKKTFNSVSKIDRMSRIVFPVLFGLFNLVYWATYLNREPVL-GVSP-- 451
P10063|GABRA2_Bos taurus SKDPVLTSTISKSATTPENKPKPENKPAEAKKTFNSVSKIDRMSRIVFPVLFGLFNLVYWATYLNREPVL-GVSP-- 451
.....410.....420.....430.....440.....450.....460.....470.....

```

::: * * *****:****:****
P34903|GABRA3 Homo sapiens MIITQTSHCYMTSLGILFLNINLPGTTGQGESRRQEPGDFVKQDIGGLSPKHAPDIPDDSTDNITIFTRILDRLLDGYDNRLRPGLGDAVEVKTDIYVT 100
A0A2R9AHX2|GABRA3 Pan paniscus MIITQTSHCYMTSLGILFLNINLPGTTGQGESRRQEPGDFVKQDIGGLSPKHAPDIPDDSTDNITIFTRILDRLLDGYDNRLRPGLGDAVEVKTDIYVT 100
H2QZ88|GABRA3 Pan troglodytes MIITQTSHCYMTSLGILFLNINLPGTTGQGESRRQEPGDFVKQDIGGLSPKHAPDIPDDSTDNITIFTRILDRLLDGYDNRLRPGLGDAVEVKTDIYVT 100
F7G8R5|GABRA3 Macaca mulatta MIITQMSHYMTSLGILFLNINLPGTTGQGESRRQEPGDFVKQDIGGLSPKHAPDIPDDSTDNITIFTRILDRLLDGYDNRLRPGLGDAVEVKTDIYVT 100
M3YJX4|GABRA3 Mustela putorius furo MIVTQMSHFYITSLGFLFLNIFPGITGQGESRRQEPGDFVKQDIGGLSPKHAPDIPDDSTDNITIFTRILDRLLDGYDNRLRPGLGDAVEVKTDIYVT 100
P20236|GABRA3 Rattus norvegicus MIITQMWHFYIVRVGLLLLSILPGTTGQGESRRQEPGDFVKQDIGGLSPKHAPDIPDDSTDNITIFTRILDRLLDGYDNRLRPGLGDAVEVKTDIYVT 100
P26049|GABRA3 Mus musculus MIITQMWHFYIVRVGLLLLSILPGTTGQGESRRQEPGDFVKQDIGGLSPKHAPDIPDDSTDNITIFTRILDRLLDGYDNRLRPGLGDAVEVKTDIYVT 100
E2QVJ7|GABRA3 Canis lupus familiaris MIVTQMSHFYITILGLLFLNIFPGITGQGESRRQEPGDFVKQDIGGLSPKHAPDIPDDSTDNITIFTRILDRLLDGYDNRLRPGLGDAVEVKTDIYVT 100
A0A2R8QC15|GABRA3 Danio rerio -----HRAVTG----HREPIPDSSKDNITIFTRILDRLLDGYDNRLRPGLGESVTEVRTNIYVT 55
P10064|GABRA3 Bos taurus MIITQMSQFYMAGLGLLFLNINLPGTTGQVESRRQEPGDFVKQDIGGLSPKHAPDIPDDSTDNITIFTRILDRLLDGYDNRLRPGLGDAVEVKTDIYVT 100
1.....10.....20.....30.....40.....50.....60.....70.....80.....90.....100

```

```

*****:****:****
P34903|GABRA3 Homo sapiens SFGPVSDTDMEYTDVFFRQVHDERLKFDPGPKILPLNLLASKIWTPTDFFHNGKKSVAHNMTTPNKLLRLVDNGTLLYTMRLTIHAECPMHLEDFPM 200
A0A2R9AHX2|GABRA3 Pan paniscus SFGPVSDTDMEYTDVFFRQVHDERLKFDPGPKILPLNLLASKIWTPTDFFHNGKKSVAHNMTTPNKLLRLVDNGTLLYTMRLTIHAECPMHLEDFPM 200
H2QZ88|GABRA3 Pan troglodytes SFGPVSDTDMEYTDVFFRQVHDERLKFDPGPKILPLNLLASKIWTPTDFFHNGKKSVAHNMTTPNKLLRLVDNGTLLYTMRLTIHAECPMHLEDFPM 200
F7G8R5|GABRA3 Macaca mulatta SFGPVSDTDMEYTDVFFRQVHDERLKFDPGPKILPLNLLASKIWTPTDFFHNGKKSVAHNMTTPNKLLRLVDNGTLLYTMRLTIHAECPMHLEDFPM 200
M3YJX4|GABRA3 Mustela putorius furo SFGPVSDTDMEYTDVFFRQVHDERLKFDPGPKILPLNLLASKIWTPTDFFHNGKKSVAHNMTTPNKLLRLVDNGTLLYTMRLTIHAECPMHLEDFPM 200
P20236|GABRA3 Rattus norvegicus SFGPVSDTDMEYTDVFFRQVHDERLKFDPGPKILPLNLLASKIWTPTDFFHNGKKSVAHNMTTPNKLLRLVDNGTLLYTMRLTIHAECPMHLEDFPM 200
P26049|GABRA3 Mus musculus SFGPVSDTDMEYTDVFFRQVHDERLKFDPGPKILPLNLLASKIWTPTDFFHNGKKSVAHNMTTPNKLLRLVDNGTLLYTMRLTIHAECPMHLEDFPM 200
E2QVJ7|GABRA3 Canis lupus familiaris SFGPVSDTDMEYTDVFFRQVHDERLKFDPGPKILPLNLLASKIWTPTDFFHNGKKSVAHNMTTPNKLLRLVDNGTLLYTMRLTIHAECPMHLEDFPM 200
A0A2R8QC15|GABRA3 Danio rerio SFGPVSDTDMEYTDVFFRQVHDERLKFDPGPKILPLNLLASKIWTPTDFFHNGKKSVAHNMTTPNKLLRLVDNGTLLYTMRLTIHAECPMHLEDFPM 155
P10064|GABRA3 Bos taurus SFGPVSDTDMEYTDVFFRQVHDERLKFDPGPKILPLNLLASKIWTPTDFFHNGKKSVAHNMTTPNKLLRLVDNGTLLYTMRLTIHAECPMHLEDFPM 200
.....110.....120.....130.....140.....150.....160.....170.....180.....190.....200

```

```

* *****:****:****
P34903|GABRA3 Homo sapiens DVHACPLKFGSYAYTTAEVVSWSLTKGKNSVEVAQDGSRLNQYDLLGHVVGTEIIRSSSTGEYVMTTFHFLKRRKIGYFVIQTYLPCIMTVILSQVSWFWLN 300
A0A2R9AHX2|GABRA3 Pan paniscus DVHACPLKFGSYAYTTAEVVSWSLTKGKNSVEVAQDGSRLNQYDLLGHVVGTEIIRSSSTGEYVMTTFHFLKRRKIGYFVIQTYLPCIMTVILSQVSWFWLN 300
H2QZ88|GABRA3 Pan troglodytes DVHACPLKFGSYAYTTAEVVSWSLTKGKNSVEVAQDGSRLNQYDLLGHVVGTEIIRSSSTGEYVMTTFHFLKRRKIGYFVIQTYLPCIMTVILSQVSWFWLN 300
F7G8R5|GABRA3 Macaca mulatta DVHACPLKFGSYAYTTAEVVSWSLTKGKNSVEVAQDGSRLNQYDLLGHVVGTEIIRSSSTGEYVMTTFHFLKRRKIGYFVIQTYLPCIMTVILSQVSWFWLN 300
M3YJX4|GABRA3 Mustela putorius furo DVHACPLKFGSYAYTTAEVVSWSLTKGKNSVEVAQDGSRLNQYDLLGHVVGTEIIRSSSTGEYVMTTFHFLKRRKIGYFVIQTYLPCIMTVILSQVSWFWLN 300
P20236|GABRA3 Rattus norvegicus DVHACPLKFGSYAYTTAEVVSWSLTKGKNSVEVAQDGSRLNQYDLLGHVVGTEIIRSSSTGEYVMTTFHFLKRRKIGYFVIQTYLPCIMTVILSQVSWFWLN 300
P26049|GABRA3 Mus musculus DVHACPLKFGSYAYTTAEVVSWSLTKGKNSVEVAQDGSRLNQYDLLGHVVGTEIIRSSSTGEYVMTTFHFLKRRKIGYFVIQTYLPCIMTVILSQVSWFWLN 300
E2QVJ7|GABRA3 Canis lupus familiaris DVHACPLKFGSYAYTTAEVVSWSLTKGKNSVEVAQDGSRLNQYDLLGHVVGTEIIRSSSTGEYVMTTFHFLKRRKIGYFVIQTYLPCIMTVILSQVSWFWLN 300
A0A2R8QC15|GABRA3 Danio rerio DAHACPLKFGSYAYTTAEVVSWSLTKGKNSVEVAQDGSRLNQYDLLGHVVGTEIIRSSSTGEYVMTTFHFLKRRKIGYFVIQTYLPCIMTVILSQVSWFWLN 255
P10064|GABRA3 Bos taurus DVHACPLKFGSYAYTTAEVVSWSLTKGKNSVEVAQDGSRLNQYDLLGHVVGTEIIRSSSTGEYVMTTFHFLKRRKIGYFVIQTYLPCIMTVILSQVSWFWLN 300
.....210.....220.....230.....240.....250.....260.....270.....280.....290.....300

```

```

*****:****:****
P34903|GABRA3 Homo sapiens RESVPARTVFGVTTVLMTTSLISARNSLPKVAYATAMDWFIACVYAFVFSALIEFATVNYFTKRSAWEGKKVPEALEMCKKTPAAPAKKTSTTFNIVG 400
A0A2R9AHX2|GABRA3 Pan paniscus RESVPARTVFGVTTVLMTTSLISARNSLPKVAYATAMDWFIACVYAFVFSALIEFATVNYFTKRSAWEGKKVPEALEMCKKTPAAPAKKTSTTFNIVG 400
H2QZ88|GABRA3 Pan troglodytes RESVPARTVFGVTTVLMTTSLISARNSLPKVAYATAMDWFIACVYAFVFSALIEFATVNYFTKRSAWEGKKVPEALEMCKKTPAAPAKKTSTTFNIVG 400
F7G8R5|GABRA3 Macaca mulatta RESVPARTVFGVTTVLMTTSLISARNSLPKVAYATAMDWFIACVYAFVFSALIEFATVNYFTKRSAWEGKKVPEALEMCKKTPAAPAKKTSTTFNIVG 400
M3YJX4|GABRA3 Mustela putorius furo RESVPARTVFGVTTVLMTTSLISARNSLPKVAYATAMDWFIACVYAFVFSALIEFATVNYFTKRSAWEGKKVPEALEMCKKTPAAPAKKTSTTFNIVG 400
P20236|GABRA3 Rattus norvegicus RESVPARTVFGVTTVLMTTSLISARNSLPKVAYATAMDWFIACVYAFVFSALIEFATVNYFTKRSAWEGKKVPEALEMCKKTPAAPAKKTSTTFNIVG 400
P26049|GABRA3 Mus musculus RESVPARTVFGVTTVLMTTSLISARNSLPKVAYATAMDWFIACVYAFVFSALIEFATVNYFTKRSAWEGKKVPEALEMCKKTPAAPAKKTSTTFNIVG 399
E2QVJ7|GABRA3 Canis lupus familiaris RESVPARTVFGVTTVLMTTSLISARNSLPKVAYATAMDWFIACVYAFVFSALIEFATVNYFTKRSAWEGKKVPEALEMCKKTPAAPAKKTSTTFNIVG 400
A0A2R8QC15|GABRA3 Danio rerio RESVPARTVFGKS-----FF----- 270
P10064|GABRA3 Bos taurus RESVPARTVFGVTTVLMTTSLISARNSLPKVAYATAMDWFMAVCYAFVFSALIEFATVNYFTKRSAWEGKKVPEALEMCKKTPAVPTKKTSTTFNIVG 400
.....310.....320.....330.....340.....350.....360.....370.....380.....390.....400

```

```

** * :**
P34903|GABRA3 Homo sapiens TYPINLAKDTEFSTISK-GAAPSASSTPTIIASPKATVYVQDPTETKTYNSVSKVDKISRIFPVLFVFAIFNLVYWAYTVNRESAIKGMIRKQ 492
A0A2R9AHX2|GABRA3 Pan paniscus TYPINLAKDTEFSTISK-GAAPSASSTPTIIASPKATVYVQDPTETKTYNSVSKVDKISRIFPVLFVFAIFNLVYWAYTVNRESAIKGMIRKQ 492
H2QZ88|GABRA3 Pan troglodytes TYPINLAKDTEFSTISK-GAAPSASSTPTIIASPKATVYVQDPTETKTYNSVSKVDKISRIFPVLFVFAIFNLVYWAYTVNRESAIKGMIRKQ 492
F7G8R5|GABRA3 Macaca mulatta TYPINLAKDTEFSTISK-GAAPSASSTPTIIASPKATVYVQDPTETKTYNSVSKVDKISRIFPVLFVFAIFNLVYWAYTVNRESAIKGMIRKQ 492
M3YJX4|GABRA3 Mustela putorius furo TYPINLAKDTEFSTISK-GAAPSASSTPTIIASPKATVYVQDPTETKTYNSVSKVDKISRIFPVLFVFAIFNLVYWAYTVNRESAIKGMIRKH 492
P20236|GABRA3 Rattus norvegicus TYPINLAKDTEFSTISKAAPASSTPTIIASPKATVYVQDPTETKTYNSVSKVDKISRIFPVLFVFAIFNLVYWAYTVNRESAIKGMIRKQ 493
P26049|GABRA3 Mus musculus TYPINLAKDTEFSTISKAAPASSTPTIIASPKATVYVQDPTETKTYNSVSKVDKISRIFPVLFVFAIFNLVYWAYTVNRESAIKGMIRKQ 492
E2QVJ7|GABRA3 Canis lupus familiaris TYPINLAKDTEFSTISK-GAAPSASSTPTIIASPKATVYVQDPTETKTYNSVSKVDKISRIFPVLFVFAIFNLVYWAYTVNRESAIKGMIRKH 492
A0A2R8QC15|GABRA3 Danio rerio --YP-----FAVY----- 277
P10064|GABRA3 Bos taurus TYPINLAKDTEFSAISK-GAAPSTSTPTIIASPKATVYVQDPTETKTYNSVSKVDKISRIFPVLFVFAIFNLVYWAYTVNRESAIKGMIRKQ 492
.....410.....420.....430.....440.....450.....460.....470.....480.....490...

```

P48169|GABRA4 Homo sapiens MVS AKKVP AIALSAGVS FALLRFLCLAVCLNES PGQNK EEKLC TENFTRILDS LLDGYDNRLRPGF GGPVTEVKTDIYVTSFGPVS DVEMEYTM DVVFR 100
A0A2R9C6M3|GABRA4 Pan paniscus MVS AKKVP AIALSAGVS FALLRFLCLAVCLNES PGQNK EEKLC TENFTRILDS LLDGYDNRLRPGF GGPVTEVKTDIYVTSFGPVS DVEMEYTM DVVFR 100
H2QPE7|GABRA4 Pan troglodytes MVS AKKVP AIALSAGVS FALLRFLCLAVCLNES PGQNK EEKLC TENFTRILDS LLDGYDNRLRPGF GGPVTEVKTDIYVTSFGPVS DVEMEYTM DVVFR 100
F6YLN4|GABRA4 Macaca mulatta MVS AKKVP AIALSAGVS FALLRFLCLAVCLNES PGQNK EEKLC TENFTRILDS LLDGYDNRLRPGF GGPVTEVKTDIYVTSFGPVS DVEMEYTM DVVFR 100
M3Y0X5|GABRA4 Mustela putorius furo MVS AKKVP AIALSAGVS FALLRFLCLAVCLNES PGQNK EEKLC TENFTRILDS LLDGYDNRLRPGF GGPVTEVKTDIYVTSFGPVS DVEMEYTM DVVFR 100
P28471|GABRA4 Rattus norvegicus MVS VQKVP AIVLCSGVS LALLHLVCLATCLNES PGQNSK DEKLC PENFTRILDS LLDGYDNRLRPGF GGPVTEVKTDIYVTSFGPVS DVEMEYTM DVVFR 100
Q9D6F4|GABRA4 Mus musculus MVS VQKVP AIALCSGVS LALLHLVCLAVCLNES PGQNSK DEKLC PENFTRILDS LLDGYDNRLRPGF GGPVTEVKTDIYVTSFGPVS DVEMEYTM DVVFR 100
F1P9P9|GABRA4 Canis lupus familiaris -----MVMTTGCALDLGGLLSLVSHV--LPLEKGRGK-----GPVTEVKTDIYVTSFGPVS DVEMEYTM DVVFR 62
Q568M9|GABRA4 Danio rerio MVS AKKEMV TAMYPTS I S T LLYFLCVAACIKRISGQ IRRKDEKLYPENFTRILDRLLDGYDNRLRPGF GGPVTEVKTDIYVTSFGPVS DVEMEYTM DVVFR 100
P20237|GABRA4 Bos taurus MVS AKKVP AIALSAGVS FALLRFLCLAVCLNES PGQNK EEKLC TENFTRILDS LLDGYDNRLRPGF GGPVTEVKTDIYVTSFGPVS DVEMEYTM DVVFR 100
1.....10.....20.....30.....40.....50.....60.....70.....80.....90.....100

::***:*****:*****:***:*****:*****:*****:*****:*****:*****:*****:***:*****:***
P48169|GABRA4 Homo sapiens QTWIDKRLKYDGP I E I L R L N M M V T K V W I P D T F F R N G K K S V S H N M T A P N K L F R I M R N G T I L Y T M R L T I S A E C P M R L V D F P M D G H A C P L K F G S Y A Y P K S E M 200
A0A2R9C6M3|GABRA4 Pan paniscus QTWIDKRLKYDGP I E I L R L N M M V T K V W I P D T F F R N G K K S V S H N M T A P N K L F R I M R N G T I L Y T M R L T I S A E C P M R L V D F P M D G H A C P L K F G S Y A Y P K S E M 200
H2QPE7|GABRA4 Pan troglodytes QTWIDKRLKYDGP I E I L R L N M M V T K V W I P D T F F R N G K K S V S H N M T A P N K L F R I M R N G T I L Y T M R L T I S A E C P M R L V D F P M D G H A C P L K F G S Y A Y P K S E M 200
F6YLN4|GABRA4 Macaca mulatta QTWIDKRLKYDGP I E I L R L N M M V T K V W I P D T F F R N G K K S V S H N M T A P N K L F R I M R N G T I L Y T M R L T I S A E C P M R L V D F P M D G H A C P L K F G S Y A Y P K S E M 200
M3Y0X5|GABRA4 Mustela putorius furo QTWIDKRLKYDGP I E I L R L N M M V T K V W I P D T F F R N G K K S V S H N M T A P N K L F R I M R N G T I L Y T M R L T I S A E C P M R L V D F P M D G H A C P L K F G S Y A Y P K S E M 200
P28471|GABRA4 Rattus norvegicus QTWIDKRLKYDGP I E I L R L N M M V T K V W I P D T F F R N G K K S V S H N M T A P N K L F R I M R N G T I L Y T M R L T I S A E C P M R L V D F P M D G H A C P L K F G S Y A Y P K S E M 200
Q9D6F4|GABRA4 Mus musculus QTWIDKRLKYDGP I E I L R L N M M V T K V W I P D T F F R N G K K S V S H N M T A P N K L F R I M R N G T I L Y T M R L T I S A E C P M R L V D F P M D G H A C P L K F G S Y A Y P K S E M 200
F1P9P9|GABRA4 Canis lupus familiaris QTWIDKRLKYDGP I E I L R L N M M V T K V W I P D T F F R N G K K S V S H N M T A P N K L F R I M R N G T I L Y T M R L T I S A E C P M R L V D F P M D G H A C P L K F G S Y A Y P K S E M 162
Q568M9|GABRA4 Danio rerio QTWVDRRLRYEGPVEI L R L N M M V T K V W I P D T F F R N G K R S V A H N M T A P N R L F R I M R N G T I L Y T M R L T I S A E C P M R L V D F P M D G H S C P L K F G S Y A Y P K T E M 200
P20237|GABRA4 Bos taurus QTWIDKRLKYDGP I E I L R L N M M V T K V W I P D T F F R N G K K S V S H N M T A P N K L F R I M R N G T I L Y T M R L T I S A E C P M R L V D F P M D G H A C P L K F G S Y A Y P K S E M 200
.....110.....120.....130.....140.....150.....160.....170.....180.....190.....200

*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****
P48169|GABRA4 Homo sapiens IYTWTKGPEKSEVVPKES S L V Q Y D L I G Q T V S S E T I K S I T G E Y I V M T V Y F H L R R K M G Y F M I Q T Y I P C I M T V I L S Q V S F W I N K E S V P A R T V F G I T T V L T M T 300
A0A2R9C6M3|GABRA4 Pan paniscus IYTWTKGPEKSEVVPKES S L V Q Y D L I G Q T V S S E T I K S I T G E Y I V M T V Y F H L R R K M G Y F M I Q T Y I P C I M T V I L S Q V S F W I N K E S V P A R T V F G I T T V L T M T 300
H2QPE7|GABRA4 Pan troglodytes IYTWTKGPEKSEVVPKES S L V Q Y D L I G Q T V S S E T I K S I T G E Y I V M T V Y F H L R R K M G Y F M I Q T Y I P C I M T V I L S Q V S F W I N K E S V P A R T V F G I T T V L T M T 300
F6YLN4|GABRA4 Macaca mulatta IYTWTKGPEKSEVVPKES S L V Q Y D L I G Q T V S S E T I K S I T G E Y I V M T V Y F H L R R K M G Y F M I Q T Y I P C I M T V I L S Q V S F W I N K E S V P A R T V F G I T T V L T M T 300
M3Y0X5|GABRA4 Mustela putorius furo IYTWTKGPEKSEVVPKES S L V Q Y D L I G Q T V S S E T I K S I T G E Y I V M T V Y F H L R R K M G Y F M I Q T Y I P C I M T V I L S Q V S F W I N K E S V P A R T V F G I T T V L T M T 300
P28471|GABRA4 Rattus norvegicus IYTWTKGPEKSEVVPKES S L V Q Y D L I G Q T V S S E T I K S I T G E Y I V M T V Y F H L R R K M G Y F M I Q T Y I P C I M T V I L S Q V S F W I N K E S V P A R T V F G I T T V L T M T 300
Q9D6F4|GABRA4 Mus musculus IYTWTKGPEKSEVVPKES S L V Q Y D L I G Q T V S S E T I K S I T G E Y I V M T V Y F H L R R K M G Y F M I Q T Y I P C I M T V I L S Q V S F W I N K E S V P A R T V F G I T T V L T M T 300
F1P9P9|GABRA4 Canis lupus familiaris IYTWTKGPEKSEVVPKES S L V Q Y D L I G Q T V S S E T I K S I T G E Y I V M T V Y F H L R R K M G Y F M I Q T Y I P C I M T V I L S Q V S F W I N K E S V P A R T V F G I T T V L T M T 262
Q568M9|GABRA4 Danio rerio IYTWTKGP H S V E V P P E S S L V Q Y D L I G Q T V S S E T V K S I T G E Y I V M T V Y F H L R R K M G Y F M I Q T Y I P C I M T V I L S Q V S F W I N K E S V P A R T V F G I T T V L T M T 300
P20237|GABRA4 Bos taurus IYTWTKGPEKSEVVPKES S L V Q Y D L I G Q T V S S E T I K S I T G E Y I V M T V Y F H L R R K M G Y F M I Q T Y I P C I M T V I L S Q V S F W I N K E S V P A R T V F G I T T V L T M T 300
.....210.....220.....230.....240.....250.....260.....270.....280.....290.....300

*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****:*****
P48169|GABRA4 Homo sapiens T L S I S A R H S L P K V S Y A T A M D W F I A V C F A F V F S A L I E F A A V N Y F T N I Q M E K A K R K T S K P P Q E V P A - A P V Q R E K H P E A P L - Q N T N A N L N M R K R T N A L V -- H S 396
A0A2R9C6M3|GABRA4 Pan paniscus T L S I S A R H S L P K V S Y A T A M D W F I A V C F A F V F S A L I E F A A V N Y F T N I Q M E K A K R K T S K P P Q E V P A - A P V Q R E K H P E A P L - Q N T N A N L N M R K R T N A L V -- H S 396
H2QPE7|GABRA4 Pan troglodytes T L S I S A R H S L P K V S Y A T A M D W F I A V C F A F V F S A L I E F A A V N Y F T N I Q M E K A K R K T S K P P Q E V P A - A P V Q R E K H P E A P L - Q N T N A N L N M R K R T N A L V -- H S 396
F6YLN4|GABRA4 Macaca mulatta T L S I S A R H S L P K V S Y A T A M D W F I A V C F A F V F S A L I E F A A V N Y F T N I Q M E K A K R K T S K P P Q E V P A - A P V Q R E K H P E A P L - Q N T N A N L N M R K R T N A S V -- H S 396
M3Y0X5|GABRA4 Mustela putorius furo T L S I S A R H S L P K V S Y A T A M D W F I A V C F A F V F S A L I E F A A V N Y F T N V Q M A K A K R K S S K A L Q E I P A - A P V Q R E K P P E A P L - Q N T N A N L N M R K R T N A S V -- H S 396
P28471|GABRA4 Rattus norvegicus T L S I S A R H S L P K V S Y A T A M D W F I A V C F A F V F S A L I E F A A V N Y F T N I Q M Q A K K K I S K P P P E V P A - A P V L K E K H T E T S L - Q N T H A N L N M R K R T N A L V -- H S 396
Q9D6F4|GABRA4 Mus musculus T L S I S A R H S L P K V S Y A T A M D W F I A V C F A F V F S A L I E F A A V N Y F T N I Q M Q A K K K I S K P P P E V P A - A P V L K E K H T E T S L - Q N T H A N L N M R K R T N A L V -- H S 396
F1P9P9|GABRA4 Canis lupus familiaris T L S I S A R H S L P K V S Y A T A M D W F I A V C F A F V F S A L I E F A A V N Y F T N I Q M E K A K R K S S K A L Q E I P A - A P V Q R E K H P E A P L - Q N T N A N L N M R K R T N A S V -- H S 358
Q568M9|GABRA4 Danio rerio T L S I S A R H S L P K V S Y A T A M D W F I A V C F A F V F S A L I E F A A V N Y F T N A Q A E R A K R K Q A K A A A A S V S S T G K N K D T E V L Q O N S D T N G N L R K R V N S N I Q P Q A 400
P20237|GABRA4 Bos taurus T L S I S A R H S L P K V S Y A T A M D W F I A V C F A F V F S A L I E F A A V N Y F T N V Q M E K A K R K T S K A P Q E I S A - A P V L R E K H P E T P L - Q N T N A N L S M R K R A N A L V -- H S 396
.....310.....320.....330.....340.....350.....360.....370.....380.....390.....400

::***:*****:*****:***:*****:*****:*****:*****:*****:*****:*****:***:*****:***
P48169|GABRA4 Homo sapiens E S D V G N R T E V --- G N H S S K S S T V V Q E S S K G T P R S Y L A S --- S P N P F S R A N A A E T I S - A A R A L P S A S P T S -- I R T G Y M P R K A S V G S A S T R H V F G S R L Q R 485
A0A2R9C6M3|GABRA4 Pan paniscus E S D V G N R T E V --- G N H S S K S S T V V Q E S S K G T P R S Y L A S --- S P N P F S R A N A A E T I S - A A R A L P S A S P T S -- I R T G Y M P R K A S V G S A S T R H V F G S R L Q R 485
H2QPE7|GABRA4 Pan troglodytes E S D V G N R T E V --- G N H S S K S S T V V Q E S S K G T P R S Y L A S --- S P N P F S R A N A A E T I S - A A R A L P S A S P T S -- I R T G Y M P R K A S V G S A S T R H V F G S R L Q R 485
F6YLN4|GABRA4 Macaca mulatta E S D V G N R T E V --- G N H S S K S S T V V Q E S S K G T P R S Y L A S --- S P N P F S R A N A A E T I S - A A R A L P S A S P T S -- I R T G Y M P R K A S V G S A S T R H V F G S R L Q R 485
M3Y0X5|GABRA4 Mustela putorius furo E S D A G H R T E V --- G N H S S K S S S V T Q G S S E A T P Q S Y L A S --- S P N P F S H P N A A E T I S - A A R A P L S A P P S T P - G R T G Y V S Q K --- A S T R H V F G S R L R 481
P28471|GABRA4 Rattus norvegicus E S D V N S R T E V --- G N H S S K - T T A A Q E S S E T T P K A H L A S --- S P N P F S R A N A A E T I S A A A R G L S S A A S P S --- P H G T L - Q P A P I R S A A R P A F G A R L G R 483
Q9D6F4|GABRA4 Mus musculus E S D V K S R T E V --- G N H S S K - T S A V Q E S S E A T P K A H L A S --- S P N P F S R A N A A E T M S A A A R G L S S A A S P S --- P H G T L - R P A S L G S A S T R P A F G S R L G R 483
F1P9P9|GABRA4 Canis lupus familiaris E S D V G N R T E V --- G N H S S K S S T V I Q G S S E A T P Q S Y L A A --- S P N P F S H A N A A E T I S - A A R A P L S A P S S T P - S R T G Y V S Q Q A S V G S A S T R H V F G S R L R 448
Q568M9|GABRA4 Danio rerio E S K K T Q R T E A S S K S G A S S K P I L T S Q S S T S E G T S F S S Q S R L P S S A S Q S N A A A S S S A S K I T P P A P P S T P T V P D K P S P G T P A G S A P L H L L G P K L E N 500
P20237|GABRA4 Bos taurus E S D V G S R T D V --- G N H S S K S S T V V Q G S S E A T P Q S Y L A S --- S P N P F S R A N A A E T I S - A A R A I P S A L P S T P - S R T G Y V P R Q V P V G S A S T O H V F G S R L Q R 486
.....410.....420.....430.....440.....450.....460.....470.....480.....490.....500

** : .* : . . : * * : * * * * : * * * * * * : * * * * * * * * * * * * * * * * * * * . :
 P48169|GABRA4_Homo_sapiens IKTTVNTIGATGKLSA-TPPPSAPPPSGSGTSKIDKYARILFPVTFGAFNMVYWVYLSKDTMEKSES LM 554
 A0A2R9C6M3|GABRA4_Pan_paniscus IKTTVNTIGATGKLSA-TPPPSAPPPSGSGTSKIDKYARILFPVTFGAFNMVYWVYLSKDTMEKSES LM 554
 H2QPE7|GABRA4_Pan_troglodytes IKTTVNTIGATGKLSA-TPPPSAPPPSGSGTSKIDKYARILFPVTFGAFNMVYWVYLSKDTMEKSES LM 554
 F6YLN4|GABRA4_Macaca_mulatta IKTTVNTIGATGKLSA-TPPPSAPPPSGSGTSKIDKYARILFPVTFGAFNMVYWVYLSKDTMEKSES LM 554
 M3Y0X5|GABRA4_Mustela_putorius_furo IKTTVNTIGATGKLSA-TPPPSAPPPSGSGTSKIDKYARILFPVTFGAFNMVYWVYLSKDTMEKSES LM 551
 P28471|GABRA4_Rattus_norvegicus IKTTVNTIGVPGNVSA-TPPPSAPPPSGSGTSKIDKYARILFPVTFGAFNMVYWVYLSKDTMEKSES LM 552
 Q9D6F4|GABRA4_Mus_musculus IKTTVNTIGAGNVSA-TPPPSAPPPSGSGTSKIDKYARILFPVTFGAFNMVYWVYLSKDTMEKSES LM 552
 F1P9P9|GABRA4_Canis_lupus_familiaris IKTTVNTIGASGKLSA-TTPPSAPPPSGSGTSKIDKYARILFPVTFGAFNMVYWVYLSKDTMEKSES LM 517
 Q568M9|GABRA4_Danio_rerio IK-----KKEAKAQPQPAAPATG-GASKIDEYARILFPVTFGAFNMVYWVYLSKDTMEKGA-- 557
 P20237|GABRA4_Bos_taurus IKTTVNSIGTSGKLSA-TTTPSAPPPSGSGTSKIDKYARILFPVTFGAFNMVYWVYLSKDTMEKSES LM 555
510.....520.....530.....540.....550.....560.....570


```

:***:***:*****:
P47870|GABRB2_Homo_sapiens      RWSRIFFPVVFSEFFNIVYWLYYVN 512
A0A2R9C8C8|GABRB2_Pan_paniscus  RWSRIFFPVVFSEFFNIVYWLYYVN 512
A0A2J8NKG3|GABRB2_Pan_troglodytes RWSRIFFPVVFSEFFNIVYWLYYVN 512
M3YP67|GABRB2_Mustela_putorius_furo RWSRIFFPVVFSEFFNIVYWLYYVN 512
P63138|GABRB2_Rattus_norvegicus  RWSRIFFPVVFSEFFNIVYWLYYVN 474
P63137|GABRB2_Mus_musculus      RWSRIFFPVVFSEFFNIVYWLYYVN 512
A0A5F4CKV8|GABRB2_Canis_lupus_familiaris RWSRIFFPVVFSEFFNIVYWLYYVN 512
D1LYT2|GABRB2_Macaca_mulatta    RWSRIFFPVVFSEFFNIVYWLYYVN 512
Q9DDD9|GABRB2_Danio_rerio      KWSRMIFPTLSEFFNIVYWLYYVH 519
P0C2W5|GABRB2_Bos_taurus       RWSRIFFPVVFSEFFNIVYWLYYVN 472
.....510.....520.....

```

P28472|GABRB3 Homo sapiens MWGLAGGRLFGIFSA... 100
A0A2R9BWE5|GABRB3 Pan paniscus ... 23
A0A2I3THQ1|GABRB3 Pan troglodytes ... 100
F6ZKJ4|GABRB3 Macaca mulatta ... 100
M3XNI6|GABRB3 Mustela putorius furo ... 100
P63079|GABRB3 Rattus norvegicus ... 100
P63080|GABRB3 Mus musculus ... 100
J9P3X1|GABRB3 Canis lupus familiaris ... 42
A0A0R4ILP2|GABRB3 Danio rerio ... 100
A5D7U6|GABRB3 Bos taurus ... 100
1.....10.....20.....30.....40.....50.....60.....70.....80.....90.....100

P28472|GABRB3 Homo sapiens GIPLNLTLDNRVADQLWVPD... 200
A0A2R9BWE5|GABRB3 Pan paniscus ... 123
A0A2I3THQ1|GABRB3 Pan troglodytes ... 200
F6ZKJ4|GABRB3 Macaca mulatta ... 200
M3XNI6|GABRB3 Mustela putorius furo ... 200
P63079|GABRB3 Rattus norvegicus ... 200
P63080|GABRB3 Mus musculus ... 200
J9P3X1|GABRB3 Canis lupus familiaris ... 142
A0A0R4ILP2|GABRB3 Danio rerio ... 200
A5D7U6|GABRB3 Bos taurus ... 200
.....110.....120.....130.....140.....150.....160.....170.....180.....190.....200

P28472|GABRB3 Homo sapiens TGVERIELPQFSIVEHRLVSRNVV... 300
A0A2R9BWE5|GABRB3 Pan paniscus ... 223
A0A2I3THQ1|GABRB3 Pan troglodytes ... 300
F6ZKJ4|GABRB3 Macaca mulatta ... 300
M3XNI6|GABRB3 Mustela putorius furo ... 300
P63079|GABRB3 Rattus norvegicus ... 300
P63080|GABRB3 Mus musculus ... 300
J9P3X1|GABRB3 Canis lupus familiaris ... 242
A0A0R4ILP2|GABRB3 Danio rerio ... 300
A5D7U6|GABRB3 Bos taurus ... 300
.....210.....220.....230.....240.....250.....260.....270.....280.....290.....300

P28472|GABRB3 Homo sapiens PYVKAIDMYLMGCFVVFVFLALLE... 373
A0A2R9BWE5|GABRB3 Pan paniscus ... 296
A0A2I3THQ1|GABRB3 Pan troglodytes ... 373
F6ZKJ4|GABRB3 Macaca mulatta ... 373
M3XNI6|GABRB3 Mustela putorius furo ... 373
P63079|GABRB3 Rattus norvegicus ... 373
P63080|GABRB3 Mus musculus ... 373
J9P3X1|GABRB3 Canis lupus familiaris ... 315
A0A0R4ILP2|GABRB3 Danio rerio ... 400
A5D7U6|GABRB3 Bos taurus ... 373
.....310.....320.....330.....340.....350.....360.....370.....380.....390.....400

P28472|GABRB3 Homo sapiens VHNEM--NEVSGGIGDTRNS-AISFD... 470
A0A2R9BWE5|GABRB3 Pan paniscus ... 393
A0A2I3THQ1|GABRB3 Pan troglodytes ... 470
F6ZKJ4|GABRB3 Macaca mulatta ... 470
M3XNI6|GABRB3 Mustela putorius furo ... 470
P63079|GABRB3 Rattus norvegicus ... 470
P63080|GABRB3 Mus musculus ... 470
J9P3X1|GABRB3 Canis lupus familiaris ... 412
A0A0R4ILP2|GABRB3 Danio rerio ... 495
A5D7U6|GABRB3 Bos taurus ... 469
.....410.....420.....430.....440.....450.....460.....470.....480.....490.....500

```
***
P28472|GABRB3_Homo_sapiens|YVN|473
A0A2R9BWE5|GABRB3_Pan_paniscus|YVN|396
A0A2I3THQ1|GABRB3_Pan_troglodytes|YVN|473
F6ZKJ4|GABRB3_Macaca_mulatta|YVN|473
M3XNI6|GABRB3_Mustela_putorius_furo|YVN|473
P63079|GABRB3_Rattus_norvegicus|YVN|473
P63080|GABRB3_Mus_musculus|YVN|473
J9P3X1|GABRB3_Canis_lupus_familiaris|YVN|415
A0A0R4ILP2|GABRB3_Danio_rerio|YVN|498
A5D7U6|GABRB3_Bos_taurus|YVN|472
...

```

014764|GABRD_Homo_sapiens 87
A0A2R9B726|GABRD_Pan_paniscus 100
A0A2J8K8J4|GABRD_Pan_troglodytes 87
F6QDC4|GABRD_Macaca_mulatta 63
XP_004768807.1|GABRD_Mustela_putorius_furo 87
P18506|GABRD_Rattus_norvegicus 87
P22933|GABRD_Mus_musculus 87
E2R3M6|GABRD_Canis_lupus_familiaris 87
E9QHL0|GABRD_Danio_erio 67
A0A3Q1LQH4|GABRD_Bos_taurus 86
F1QZB5|GABRZ_Danio_erio 78

014764|GABRD_Homo_sapiens 187
A0A2R9B726|GABRD_Pan_paniscus 200
A0A2J8K8J4|GABRD_Pan_troglodytes 187
F6QDC4|GABRD_Macaca_mulatta 163
XP_004768807.1|GABRD_Mustela_putorius_furo 187
P18506|GABRD_Rattus_norvegicus 187
P22933|GABRD_Mus_musculus 187
E2R3M6|GABRD_Canis_lupus_familiaris 187
E9QHL0|GABRD_Danio_erio 167
A0A3Q1LQH4|GABRD_Bos_taurus 186
F1QZB5|GABRZ_Danio_erio 177

014764|GABRD_Homo_sapiens 287
A0A2R9B726|GABRD_Pan_paniscus 300
A0A2J8K8J4|GABRD_Pan_troglodytes 287
F6QDC4|GABRD_Macaca_mulatta 263
XP_004768807.1|GABRD_Mustela_putorius_furo 287
P18506|GABRD_Rattus_norvegicus 287
P22933|GABRD_Mus_musculus 287
E2R3M6|GABRD_Canis_lupus_familiaris 287
E9QHL0|GABRD_Danio_erio 267
A0A3Q1LQH4|GABRD_Bos_taurus 286
F1QZB5|GABRZ_Danio_erio 276

014764|GABRD_Homo_sapiens 380
A0A2R9B726|GABRD_Pan_paniscus 393
A0A2J8K8J4|GABRD_Pan_troglodytes 380
F6QDC4|GABRD_Macaca_mulatta 358
XP_004768807.1|GABRD_Mustela_putorius_furo 380
P18506|GABRD_Rattus_norvegicus 380
P22933|GABRD_Mus_musculus 380
E2R3M6|GABRD_Canis_lupus_familiaris 384
E9QHL0|GABRD_Danio_erio 362
A0A3Q1LQH4|GABRD_Bos_taurus 383
F1QZB5|GABRZ_Danio_erio 372

014764|GABRD_Homo_sapiens 443
A0A2R9B726|GABRD_Pan_paniscus 456
A0A2J8K8J4|GABRD_Pan_troglodytes 443
F6QDC4|GABRD_Macaca_mulatta 421
XP_004768807.1|GABRD_Mustela_putorius_furo 443
P18506|GABRD_Rattus_norvegicus 440
P22933|GABRD_Mus_musculus 440
E2R3M6|GABRD_Canis_lupus_familiaris 447
E9QHL0|GABRD_Danio_erio 429
A0A3Q1LQH4|GABRD_Bos_taurus 483
F1QZB5|GABRZ_Danio_erio 437


```

*
O14764|GABRD_Homo_sapiens      VIYWAAAYAM----- 452
A0A2R9B726|GABRD_Pan_paniscus   VIYWAAAYAM----- 465
A0A2J8K8J4|GABRD_Pan_troglodytes    VIYWAAAYAM----- 452
F6QDC4|GABRD_Macaca_mulatta     VIYWAAAYAM----- 430
XP_004768807.1|GABRD_Mustela_putorius_furo VLYWAAAYAM----- 452
P18506|GABRD_Rattus_norvegicus  IIYWAAAYTM----- 449
P22933|GABRD_Mus_musculus        IIYWAAAYTM----- 449
E2R3M6|GABRD_Canis_lupus_familiaris VLYWAAAYAM----- 456
E9QHL0|GABRD_Danio_rerio       VIYWVAYTM----- 438
A0A3Q1LQH4|GABRD_Bos_taurus     P T S W R A T P T R P S M G K P G V V G S P R P C S G H 511
F1QZB5|GABRZ_Danio_rerio       L L Y W T Y Y L Y F ----- 447
.....510.....520.....

```

```

* .*** :* . : *      * : : . . . * * * * *      . : : * * *      : * : * . : * : * : * * * * * *
P78334|GABRE_Homo_sapiens      M L S K V L P V L L G I L L I L Q S R V E G P O T E S K N E A S S R D V - V Y G P O P O ----- P L E N Q L L S E E T K S T E T E T G S R V - G K L P E A S R I L N T I L S N Y D H K L R P G I      90
A0A2R8ZSJ9|GABRE_Pan_paniscus M L S K V L P V L L G I L L I L Q S R V E G P O T E S K N E A S S R D V - V Y G P O P O ----- P L E N Q L L S E E T K S T E T E T G R R V - G K L P E A S R I L N T I L S N Y D H K L R P G I      90
H2QZ86|GABRE_Pan_troglodytes   M L S K V L P V L L G I L L I L Q S R V E G P O T E S K N E A S S R D V - V Y G P O P O ----- P L E N Q L L S E E T K S T E T E T G R R V - G K L P E A S R I L N T I L S N Y D H K L R P G I      90
F7GJ80|GABRE_Macaca_mulatta      M L S K V L P V L L G I L L I L Q S R V E G P O T E S K N E A S A H D V - V Y G P P O ----- P L E N K L F S E E T K S T E T G R R A - G K L P E A S R I L N T I L S N Y D H K L R P G I      90
Q9ES14|GABRE_Rattus_norvegicus  M L P K V L L M L L N M F L A L Q W R V - G P H I K L E N K P P A Q D K V F G P O P O ----- P S G K L P A R E T E L I A D H T T E R P R G K L T R A S Q I L N T I L S N Y D H K L R P S I      91
Q9JLE8|GABRE_Mus_musculus        M L P K V L L M L L N M F L A L Q W R V - G P H V N L E N K P P A Q D K V F G P O P O P V P O P L T P P S G K L P A K E T E L I V D C M T E R P G G K L T R A S R I L N T I L S N Y D H K L R P G I      99
E2QVM5|GABRE_Canis_lupus_familiaris M L A K V L L I L L G S I I L P S R S E G P V N E S K A P S A R D D - V Y G P O P O ----- A P E K L L S E E T K S T M ----- R L - G N L P A A T H I L N S I L N N Y D H K L R P G I      85
M3YJW6|GABRE_Mustela_putorius_furo M L T K V L L I L L G M S I I L P S R S E E P R V E L E N G P S A H D D - V Y G H O P O ----- A P E N K L L S E E T V P I T F G P Y H R L - G N L Q A A T H I L N S I L N N Y D H K L R P G I      90
G3MWU9|GABRE_Bos_taurus          M S I K V L L I L L M G I L V I L P C - I E G P O V E S E E G S S G S D D K V Y G P K P O ----- P P E K L S S E E I K P I A V G T H K K L - G K M P T A T E I L D G I F H N Y D Y K L R P G I      90
1.....10.....20.....30.....40.....50.....60.....70.....80.....90.....100

* .*** :* . : *      * : : . . . * * * * *      . : : * * *      : * : * . : * : * : * * * * * *
P78334|GABRE_Homo_sapiens      G E K P T V V T V E I S V N S L G P L S I L D M E Y T I D I I F S Q T W Y D E R L C Y N D T F E S L V L N G N V S Q L W I P D T F F R N S K R T H E H E I T M P N Q M V R I Y K D G K V L Y T I R M T      190
A0A2R8ZSJ9|GABRE_Pan_paniscus G E K P T V V T V E I S V N S L G P L S I L D M E Y T I D I I F S Q T W Y D E R L S Y N D T F E S L V L N G N V S Q L W I P D T F F R N S K R T H E H E I T M P N Q M V R I Y K D G K V L Y T I R M T      190
H2QZ86|GABRE_Pan_troglodytes   G E K P T V V T V E I S V N S L G P L S I L D M E Y T I D I I F S Q T W Y D E R L S Y N D T F E S L V L N G N V S Q L W I P D T F F R N S K R T H E H E I T M P N Q M V R I Y K D G K V L Y T I R M T      190
F7GJ80|GABRE_Macaca_mulatta      G E K P T V V T V E I S V N S L G P L S I L D M E Y T I D I I F S Q T W Y D E R L C Y N D T F E S L V L N G N V S Q L W I P D T F F R N S K R T H E H E I T M P N Q M V R I Y K D G K V L Y T I R M T      190
Q9ES14|GABRE_Rattus_norvegicus  G E K P T V V T V K V F V N S L G P I S I L D M E Y S I D I I F Y Q T W Y D E R L R Y N D T F E T I L I L H G N V S Q L W I P D T F F R N S K R T Q E Y D I T I P N Q M A L I H K D G K V L Y T V R M T      191
Q9JLE8|GABRE_Mus_musculus        G E K P T V V T V E I V I V N S L G P I S T P D M E Y S I D I I F H Q T W Y D E R L R Y N D T F E T I L I L H G N V S Q L W I P D T F F R N S K R T Q E Y D I T I P N Q M A L I H K D G K V L Y S V R M T      199
E2QVM5|GABRE_Canis_lupus_familiaris G E R P T V V T V E L S V N T L G P I S I M D M E Y T I D I I F C Q T W Y D E R L R Y N G S F E S F V L N G M V S Q L W I P D T F F R N S K R T Q E H V I T M P N Q M V R I H K D G K V L Y T I R M T      185
M3YJW6|GABRE_Mustela_putorius_furo G E K P T V V T V E L S V N T L G P I S I L D M E Y T I D I I F C Q T W Y D E R L R Y N G S F E S F V L N G M V S Q L W I P D T F F R N S K R T Q E H V I T M P N Q M A R I H K D G K V L Y T I R M T      190
G3MWU9|GABRE_Bos_taurus          G E R P T V V T V E L S V N T L G P I S I M D M E Y T I D I I F C Q T W Y D E R L R F N G S F E S F V L S G L N V S L L W V P D T F F R N S K R T Y E H S I T M P N Q M V R I H K D G K V L Y T I R M T      190
.....110.....120.....130.....140.....150.....160.....170.....180.....190.....200

* .*** :* . : *      * : : . . . * * * * *      . : : * * *      : * : * . : * : * : * * * * * *
P78334|GABRE_Homo_sapiens      I D A G C S L H M L R F P M D S H S C P L S F S S F S Y P E N E M I Y K W E N F K L E I N E K N S W K L F Q F D F T G V S N K T E I I T P V G D F M V M T I F F N V S R R F G Y V A F Q N Y V P S S V      290
A0A2R8ZSJ9|GABRE_Pan_paniscus I D A G C S L H M L R F P M D S H S C P L S F S S F S Y P E N E M I Y K W E N F K L E I N E K N S W K L F Q F D F T G V S N K T E I I T P V G D F M V M T I F F N V S R R F G Y V A F Q N Y V P S S V      290
H2QZ86|GABRE_Pan_troglodytes   I D A G C S L H M L R F P M D S H S C P L S F S S F S Y P E N E M I Y K W E N F K L E I N E K N S W K L F Q F D F T G V S N K T E I I T P V G D F M V M T I F F N V S R R F G Y V A F Q N Y V P S S V      290
F7GJ80|GABRE_Macaca_mulatta      I D A G C S L H M L R F P M D S H S C P L S F S S F S Y P E N E M I Y K W E N F K L E I N E K N S W K L F Q F D F T G V S N K T E I I T P V G D F M V M T I F F N V S R R F G Y V A F Q N Y V P S S V      290
Q9ES14|GABRE_Rattus_norvegicus  I D A R C S L H M L N F P M D S H S C P L S F S S F S Y D E H E M I Y K W E N F K L K I D A K N T W K L L E F D F T G V N N K T E I I S T P V G D F M V M T I F F N V S R R F G F I V F Q N Y I P S S V      291
Q9JLE8|GABRE_Mus_musculus        I D A R C S L H M L N F P M D S H S C P L S F S S F S Y D D S E M I Y K W E N F K L E I N A K N T W K L L E F D F T G V N N K T E I I S T P F G D F M V M T I F F N V S R R F G F I V F Q N Y V P S S V      299
E2QVM5|GABRE_Canis_lupus_familiaris I D A G C L L Y M L K F P M D S H S C P L S F S S F S Y P E S E M I Y K W E N F K L Q I D E R N T W K L F Q F D F T G V T N T T E I I S T P A G D F T V M T L Y F N V S R R F G F V A F Q N Y V P S S V      285
M3YJW6|GABRE_Mustela_putorius_furo I D A G C L L H M L K F P M D S H S C P L S F S S F S Y P E S E M I Y K W E D F K L E I N E K N S W K L F Q F D F T G V T N T T E I I S T P A G D F M V M T L F F N V S R R F G F V A F Q N Y V P S S V      290
G3MWU9|GABRE_Bos_taurus          I E A G C S L H M L K F P M D S H S C P L S F S S F S Y P E N D L I Y K W E N F M L K I N E S N S W K L F Q F D F T G V S N T T E I T V T T L A G D F I V M T L Y F N V S R R F G F V A F H N Y V P S S V      290
.....210.....220.....230.....240.....250.....260.....270.....280.....290.....300

* .*** :* . : *      * : : . . . * * * * *      . : : * * *      : * : * . : * : * : * * * * * *
P78334|GABRE_Homo_sapiens      T T M L S W V S F W I K T E S A P A R T S L G I T S V L T M T L G T F S R K N F P R V S Y I T A L D F Y I A I C F V F C F C A L L E F A V L N F L I Y N Q T K A H A S P K L ----- R H P R I N S      384
A0A2R8ZSJ9|GABRE_Pan_paniscus T T M L S W V S F W I K T E S A P A R T S L G I T S V L T M T L G T F S R K N F P R V S Y I T A L D F Y I A I C F V F C F C A L L E F A V L N F L I Y N Q T K A H A S P K L ----- R H P R I N S      384
H2QZ86|GABRE_Pan_troglodytes   T T M L S W V S F W I K T E S A P A R T S L G I T S V L T M T L G T F S R K N F P R V S Y I T A L D F Y I A I C F V F C F C A L L E F A V L N F L I Y N Q T K A H A S P K L ----- R H P R I N S      384
F7GJ80|GABRE_Macaca_mulatta      T T M L S W V S F W I K T E S A P A R T S L G I T S V L T M T L G T F S R K N F P R V S Y I T A L D F Y I A I C F V F C F C A L L E F A V L N F L I Y N Q T K A H A S P K L ----- R H P R I D S      384
Q9ES14|GABRE_Rattus_norvegicus  T T M L S W V S F W I K I E A A A A R A S V G V S S V L T M A T L G T F S R K N F P R V S Y L T A L D F Y I A I C F V L C F C T L L E F T V L N F L T Y N N I E R Q A S P K F Y Q F P T M S R A N A R T      391
Q9JLE8|GABRE_Mus_musculus        T T M L S W V S F W I K I E A A A A R A S V G V S S V L T M A T L G T L C K N F P R V S Y L T A L D F Y I A I C F V L C F C T L L E F A V L N F L T Y N N I K R Q A S L K V Y Q L P T M S R A N A H T      399
E2QVM5|GABRE_Canis_lupus_familiaris T T M L S W V S F W I K R D S A P A R T S L G I T S V L T M T L G T F S R K N F P R V S Y I T A L D F Y I A I C F V F C F C A L M E F A V L N F L T Y N R T N P R A S P K L ----- R H P -----      375
M3YJW6|GABRE_Mustela_putorius_furo T T M L S W V S F W I K K D S A P A R T S L G I T S V L T M T L G T F S R K N F P R V S Y V T A L D F Y I A I C F V F C F C A L M E F A V L N F L T Y N W T K P R A S P R F ----- R H P -----      380
G3MWU9|GABRE_Bos_taurus          T T M V S W I S F W I K K E S A P A R T S L G I T S V L T M T L G T F S R K N F P R V S Y I T A L D F Y I A I C F V F C F C A L M E F A V L N F L T Y N R T A P R G S P I L ----- R H P -----      380
.....310.....320.....330.....340.....350.....360.....370.....380.....390.....400

* .*** :* . : *      * : : . . . * * * * *      . : : * * *      : * : * . : * : * : * * * * * *
P78334|GABRE_Homo_sapiens      R A H A R T R A R S R A C A R Q H Q E A F V C Q I V T T E ----- G S D G E E H P S C S A Q P P S P G S P E G P R S L C S K L A C C E W C K R F K K Y F C M V P D C E G S T W Q Q G R L C I H V Y R      479
A0A2R8ZSJ9|GABRE_Pan_paniscus R A H A R T R A R S R A C A R Q H Q E A F V C Q I V T T E ----- G S D G E E H P S C S A Q P P S P G S P E G P R S L C S K L A C C E W C K G F K K Y F C M V P D C E G S T W Q Q G R L C I H V Y R      479
H2QZ86|GABRE_Pan_troglodytes   R A H A R T R A R S R A C A R Q H Q E A F V C Q I V T T E ----- G S D G E E R P S C S A Q P P S P G S P E G P R S L C S K L A C C E W C K G F K K Y F C M V P D C E G S T W Q Q G R L C I H V Y R      479
F7GJ80|GABRE_Macaca_mulatta      R A H A R T R A R S R A C A R Q H Q E A F V C Q I V T T E ----- G S D G E D R P S C S A Q P P S P G S P E G P R S L C S K L A C C E W C K G F K K Y F C M V P D C E G S T W Q Q G R L C I H V Y R      479
Q9ES14|GABRE_Rattus_norvegicus  R A R A R T R A R A R A R A R Q Q E V F V C E I V T Y E ----- E N A E E G ----- Y Q W S P R S R R P C P W R R C G R S Y V C F R V -- L R K Y F C M V P G C E G S T W Q Q G R I C I H V Y R      479
Q9JLE8|GABRE_Mus_musculus        R A R A R T R A R A R A R A R Q Q E V F V C E I V T Y E ----- E N A E E G ----- Y Q W S P R S R R P C P W R R C G R S Y V C F R V -- L R K Y F C M A P G C E G S W R G R I C I H V Y R      487
E2QVM5|GABRE_Canis_lupus_familiaris Q I R A R S R T P P R A H V H Q H P E A F V C Q I E D S E ----- E S D E E G P S C P A Q Q S L S L D T T O R P G - G C ----- C K W C --- K K Y F C M V P S C E G S I W Q G R L F I H I Y R      461
M3YJW6|GABRE_Mustela_putorius_furo H I R A R A L T P P R A H V H Q H P E A F V C Q I E D S E ----- E S D G E E G P F C P A Q Q S F R R R T I Q A G N G C ----- C K W C --- K K Y F C V V P S C E G S I W Q Q G R L F I H I Y R      467
G3MWU9|GABRE_Bos_taurus          R A T I R V R I P ----- V V E H P E A F V C I E D S E E E E L G E S E E D E G P S C P A R Q A T R P S R L O R S A - G C ----- S R W C --- D K Y C C M V P T C D A S S W Q Q G R L F I H V Y R      467
.....410.....420.....430.....440.....450.....460.....470.....480.....490.....500

```

```

*****:***:*****:***:****
P78334|GABRE_Homo_sapiens      LDNYSRVVFPVTFFFFNVLVWLVCLNL 506
A0A2R8ZSJ9|GABRE_Pan_paniscus  LDNYSRVVFPVTFFFFNVLVWLVCLNL 506
H2QZ86|GABRE_Pan_troglodytes   LDNYSRVVFPVTFFFFNVLVWLVCLNL 506
F7GJ80|GABRE_Macaca_mulatta      LDNYSRVVFPVTFFFFNVLVWLVCLNL 506
Q9ES14|GABRE_Rattus_norvegicus  LDNYSRVLFPIIFFFFNVVVWVICLNL 506
Q9JLE8|GABRE_Mus_musculus       LDNYSRVLFPIIFFFFNVLVWLVCLNL 514
E2QVM5|GABRE_Canis_lupus_familiaris LDNYSRVIFPVTFFFFNVLVWLVCLNL 488
M3YJW6|GABRE_Mustela_putorius_furo LDNYSRVVFPVTFFFFNVLVWLVCLNL 494
G3MWU9|GABRE_Bos_taurus        LDNYSRVIFPVTFFFFNVLVWLVCLNL 494
.....510.....520.....

```

Q8N1C3|GABRG1_Homo_sapiens ---MGPLKAFLEFPFLLRSSQSRGVRLVFLLLT--LHLGNCVDKADDEDEDLTVNKTWVWLAPKIHGEGDITQILNSLLOGYDNKLRPDIGVRPTVIETDVY 95
A0A2R9A1L5|GABRG1_Pan_paniscus ---MGPLKAFLEFPFLLRSSQSRGVRLVFLLLT--LHLGNCVDKADDEDEDLTVNKTWVWLAPKIHGEGDITQILNSLLOGYDNKLRPDIGVRPTVIETDVY 95
H2QPE4|GABRG1_Pan_troglodytes ---MGPLKAFLEFPFLLRSSQSRGVRLVFLLLT--LHLGNCVDKADDEDEDLTVNKTWVWLAPKIHGEGDITQILNSLLOGYDNKLRPDIGVRPTVIETDVY 95
A0A5F8A0N7|GABRG1_Macaca_mulatta ---MGPLKAFLEFPFLLRSSQSRGVRLVFLLLT--LHLGNCVDKADDEDEDLTVNKTWVWLAPKIHGEGDITQILNSLLOGYDNKLRPDIGVRPTVIETDVY 95
M3Y0V1|GABRG1_Mustela_putorius_furo ---MGSWKAFLEFPFLLRSSQSRVRLMFLLLT--LHLGNCVDKVDEDEDLTVNKTWVWLAPRIHGEDITQILNSLLOGYDNKLRPDIGVRPTVIETDVY 95
P23574|GABRG1_Rattus_norvegicus ---MGSQKAFLEFPFLLRSSQSRVRLVFLLLT--LHLGNCIDKADDEDEDLTMNKTWVWLAPKIHGEGDITQILNSLLOGYDNKLRPDIGVRPTVIETDVY 95
Q9R0Y8|GABRG1_Mus_musculus ---MGSQKAFLEFPFLLRSSQSRVRLVFLLLT--LHLGNCVDKADDEDEDLTMNKTWVWLAPKIHGEGDITQILNSLLOGYDNKLRPDIGVRPTVIETDVY 95
E2RH22|GABRG1_Canis_lupus_familiaris MPPMGPWKAPLCSFPFLLRSSQSRVRLVFLLLT--LHLGNCVDKVDEDEDLTVNKTWVWLAPKIHGEGDITQILNSLLOGYDNKLRPDIGVRPTVIETDVY 98
A0A0R4IPF9|GABRG1_Danio_rerio YMLNSPLQE---AP---SHAYGYFVLP LLNNOIMAFGPS--KAEEEDYEDVPINKTWVLSPKVYSDVTLILNKLLOGYDNKLRPDIGVRPTVIETAVY 91
F6Q4V7|GABRG1_Bos_taurus ---MGSWKALFLEFPFLLRSSQSRVRLMFLLLT--VHLGNCVDKADDEDEDLTVNKTWVWLAPKIHGEGDITQILNSLLOGYDNKLRPDIGVRPTVIETDVY 95
1.....10.....20.....30.....40.....50.....60.....70.....80.....90.....100

Q8N1C3|GABRG1_Homo_sapiens VNSIGPVDPINMEYTIIDIIFAQTWFD SRLKFNSTMKVLMNLSNMVGIWIPDITFFRNSRKS DAHWITTPNRLRLRIWNGRVLVYTLRLTINAECYLQLHNF 195
A0A2R9A1L5|GABRG1_Pan_paniscus VNSIGPVDPINMEYTIIDIIFAQTWFD SRLKFNSTMKVLMNLSNMVGIWIPDITFFRNSRKS DAHWITTPNRLRLRIWNGRVLVYTLRLTINAECYLQLHNF 195
H2QPE4|GABRG1_Pan_troglodytes VNSIGPVDPINMEYTIIDIIFAQTWFD SRLKFNSTMKVLMNLSNMVGIWIPDITFFRNSRKS DAHWITTPNRLRLRIWNGRVLVYTLRLTINAECYLQLHNF 195
A0A5F8A0N7|GABRG1_Macaca_mulatta VNSIGPVDPINMEYTIIDIIFAQTWFD SRLKFNSTMKVLMNLSNMVGIWIPDITFFRNSRKS DAHWITTPNRLRLRIWNGRVLVYTLRLTINAECYLQLHNF 195
M3Y0V1|GABRG1_Mustela_putorius_furo VNSIGPVDPINMEYTIIDIIFAQTWFD SRLKFNSTMKVLMNLSNMVGIWIPDITFFRNSRKS DAHWITTPNRLRLRIWNGRVLVYTLRLTINAECYLQLHNF 195
P23574|GABRG1_Rattus_norvegicus VNSIGPVDPINMEYTIIDIIFAQTWFD SRLKFNSTMKVLMNLSNMVGIWIPDITFFRNSRKS DAHWITTPNRLRLRIWSDGRVLVYTLRLTINAECYLQLHNF 195
Q9R0Y8|GABRG1_Mus_musculus VNSIGPVDPINMEYTIIDIIFAQTWFD SRLKFNSTMKVLMNLSNMVGIWIPDITFFRNSRKS DAHWITTPNRLRLRIWSDGRVLVYTLRLTINAECYLQLHNF 195
E2RH22|GABRG1_Canis_lupus_familiaris VNSIGPVDPINMEYTIIDIIFAQTWFD SRLKFNSTMKVLMNLSNMVGIWIPDITFFRNSRKS DAHWITTPNRLRLRIWNGRVLVYTLRLTINAECYLQLHNF 198
A0A0R4IPF9|GABRG1_Danio_rerio VNSIGPVDPINMEYTIIDIIFAQTWYD SRLKFNSSMKLLMNSNMVGIWIPDITFFRNSRKS DAHWITTPNRLRLRWSNGRVMYTLRLTINAECYLKLHNF 191
F6Q4V7|GABRG1_Bos_taurus VNSIGPVDPINMEYTIIDIIFAQTWFD SRLKFNSTMKVLMNLSNMVGIWIPDITFFRNSRKS DAHWITTPNRLRLRIWNGRVLVYTLRLTINAECYLQLHNF 195
.....110.....120.....130.....140.....150.....160.....170.....180.....190.....200

Q8N1C3|GABRG1_Homo_sapiens PMDEHSCPLEFSSYGYPKNEIEYKWKPPSVEVADPKYWRLYQFAFVGLRNSTEIHTISGDYVIMTIFFDLRRMGYFTIQTYIPCILTVVLSWVSWFWIN 295
A0A2R9A1L5|GABRG1_Pan_paniscus PMDEHSCPLEFSSYGYPKNEIEYKWKPPSVEVADPKYWRLYQFAFVGLRNSTEIHTISGDYVIMTIFFDLRRMGYFTIQTYIPCILTVVLSWVSWFWIN 295
H2QPE4|GABRG1_Pan_troglodytes PMDEHSCPLEFSSYGYPKNEIEYKWKPPSVEVADPKYWRLYQFAFVGLRNSTEIHTISGDYVIMTIFFDLRRMGYFTIQTYIPCILTVVLSWVSWFWIN 295
A0A5F8A0N7|GABRG1_Macaca_mulatta PMDEHSCPLEFSSYGYPKNEIEYKWKPPSVEVADPKYWRLYQFAFVGLRNSTEIHTISGDYVIMTIFFDLRRMGYFTIQTYIPCILTVVLSWVSWFWIN 295
M3Y0V1|GABRG1_Mustela_putorius_furo PMDEHSCPLEFSSYGYPKNEIEYKWKPPSVEVADPKYWRLYQFAFVGLRNSTEIHTISGDYVIMTIFFDLRRMGYFTIQTYIPCILTVVLSWVSWFWIN 295
P23574|GABRG1_Rattus_norvegicus PMDEHSCPLEFSSYGYPKNEIEYKWKPPSVEVADPKYWRLYQFAFVGLRNSTEIHTISGDYVIMTIFFDLRRMGYFTIQTYIPCILTVVLSWVSWFWIN 295
Q9R0Y8|GABRG1_Mus_musculus PMDEHSCPLEFSSYGYPKNEIEYKWKPPSVEVADPKYWRLYQFAFVGLRNSTEIHTISGDYVIMTIFFDLRRMGYFTIQTYIPCILTVVLSWVSWFWIN 295
E2RH22|GABRG1_Canis_lupus_familiaris PMDEHSCPLEFSSYGYPKNEIEYKWKPPSVEVADPKYWRLYQFAFVGLRNSTEIHTISGDYVIMTIFFDLRRMGYFTIQTYIPCILTVVLSWVSWFWIN 298
A0A0R4IPF9|GABRG1_Danio_rerio PMDEHSCPLEFSSYGYPKNEIQYRWQRSSVEVADQRYWRLYQFAFVGLRNSSDVANTQSGEYVIMTIFFDLRRMGYFTIQTYIPCSMIVVLSWVSWFWIN 291
F6Q4V7|GABRG1_Bos_taurus PMDEHSCPLEFSSYGYPKNEIEYKWKPPSVEVADPKYWRLYQFAFVGLRNSTEIHTISGDYVIMTIFFDLRRMGYFTIQTYIPCILTVVLSWVSWFWIN 295
.....210.....220.....230.....240.....250.....260.....270.....280.....290.....300

Q8N1C3|GABRG1_Homo_sapiens KDAVPARTSLGITTVLTMFTLSTIARKSLPKVSYVTAMDLFVSVCFIFVFAALMEYGLHYFTSNQKGGTATKDRKLNKASMT PGLHPGSTLIPMNNIS 395
A0A2R9A1L5|GABRG1_Pan_paniscus KDAVPARTSLGITTVLTMFTLSTIARKSLPKVSYVTAMDLFVSVCFIFVFAALMEYGLHYFTSNQKGGTATKDRKLNKASMT PGLHPGSTLIPMNNIS 395
H2QPE4|GABRG1_Pan_troglodytes KDAVPARTSLGITTVLTMFTLSTIARKSLPKVSYVTAMDLFVSVCFIFVFAALMEYGLHYFTSNQKGGTATKDRKLNKASMT PGLHPGSTLIPMNNIS 395
A0A5F8A0N7|GABRG1_Macaca_mulatta KDAVPARTSLGITTVLTMFTLSTIARKSLPKVSYVTAMDLFVSVCFIFVFAALMEYGLHYFTSNKKGKTATKDRKLNKASMT PGLHPGSTLIPMNSVS 395
M3Y0V1|GABRG1_Mustela_putorius_furo KDAVPARTSLGITTVLTMFTLSTIARKSLPKVSYVTAMDLFVSVCFIFVFAALMEYGLHYFTSNKKGKTATKDRKLNKASMT PGLHPGSTLIPMNNIS 394
P23574|GABRG1_Rattus_norvegicus KDAVPARTSLGITTVLTMFTLSTIARKSLPKVSYVTAMDLFVSVCFIFVFAALMEYGLHYFTSNKKGKTATKDRKLNKASMT PGLHPGSTLIPMNNIS 394
Q9R0Y8|GABRG1_Mus_musculus KDAVPARTSLGITTVLTMFTLSTIARKSLPKVSYVTAMDLFVSVCFIFVFAALMEYGLHYFTSNKKGKTATKDRKLNKASMT PGLHPGSTLIPMNNIS 394
E2RH22|GABRG1_Canis_lupus_familiaris KDAVPARTSLGITTVLTMFTLSTIARKSLPKVSYVTAMDLFVSVCFIFVFAALMEYGLHYFTSNKKGKTATKDRKLNKASMT PGLHPGSTLIPMNSIS 397
A0A0R4IPF9|GABRG1_Danio_rerio KDAVPARTSLGITTVLTMFTLSTISRKSLPKVSYVTAMDLFVSVCFIFVFAALMEYGLHYFTSNRQNKKTATKSSHAQKPSMVN--IRPGTSLQMNIA 388
F6Q4V7|GABRG1_Bos_taurus KDAVPARTSLGITTVLTMFTLSTIARKSLPKVSYVTAMDLFVSVCFIFVFAALMEYGLHYFTSNKKGKTATREKPKPKLKTSMSSGLHPGSTLIPMNSLS 394
.....310.....320.....330.....340.....350.....360.....370.....380.....390.....400

Q8N1C3|GABRG1_Homo_sapiens VPG-EDDYGYQCLEGKDCASFFCCFEDCRTGSWREGRIHIRIAKIDYSRIFP---PTAFALFNLVYVWGYLYL----- 465
A0A2R9A1L5|GABRG1_Pan_paniscus VPG-EDDYGYQCLEGKDCASFFCCFEDCRTGSWREGRIHIRIAKIDYSRIFP---PTAFALFNLVYVWGYLYL----- 465
H2QPE4|GABRG1_Pan_troglodytes VPG-EDDYGYQCLEGKDCASFFCCFEDCRTGSWREGRIHIRIAKIDYSRIFP---PTAFALFNLVYVWGYLYL----- 465
A0A5F8A0N7|GABRG1_Macaca_mulatta VPG-EDDYGYQCLEGKDCASFFCCFEDCRTGSWREGRIHIRIAKIDYSRIFP---PTAFALFNLVYVWGYLYL----- 478
M3Y0V1|GABRG1_Mustela_putorius_furo LPHGEDDYGYQCLEGKDCASFFCCFEDCRTGSWREGRIHIRIAKIDYSRIFP---PTAFALFNLVYVWGYLYL----- 465
P23574|GABRG1_Rattus_norvegicus MPQGEDDYGYQCLEGKDCASFFCCFEDCRTGSWREGRIHIRIAKIDYSRIFP---PTAFALFNLVYVWGYLYL----- 465
Q9R0Y8|GABRG1_Mus_musculus LPHGEDDYGYQCLEGKDCASFFCCFEDCRTGSWREGRIHIRIAKIDYSRIFP---PTAFALFNLVYVWGYLYL----- 465
E2RH22|GABRG1_Canis_lupus_familiaris LPHGEDDYGYQCLEGKDCASFFCCFEDCRTGSWREGRIHIRIAKIDYSRIFP---PTAFALFNLVYVWGYLYL----- 468
A0A0R4IPF9|GABRG1_Danio_rerio PVHEDDDYAYECLDGKDCASFFCCFEDCRTGSWREGRIHIRIAKIDYSRIFP---PTAFGLFNLVYVWGYLYL----- 459
F6Q4V7|GABRG1_Bos_taurus LPHGEDDYGYQCLEGKDCASFFCCFEDCRTGSWREGRIHIRIAKIDYSRIFP---PTAFALFNLVYVWGYLYL----- 465
.....410.....420.....430.....440.....450.....460.....470.....480.....

Q99928|GABRG3_Homo_sapiens MAPKLLLLLLCLFSLGHARSRKV--EED EYEDSSSNQKWWLAPKSDTDVTLILNKLREYDKKLRPDIGIKPTVIDVDIYVNSIGPVSSINMEYQIDIFF 98
A0A2R9BD98|GABRG3_Pan_paniscus -----SRKV--EED EYEDSSSNQKWWLAPKSDTDVTLILNKLREYDKKLRPDIGIKPTVIDVDIYVNSIGPVSSINMEYQIDIFF 80
A0A2I3TTK9|GABRG3_Pan_troglodytes MAPKLLLLLLCLFSLGHARSRKV--EED EYEDSSSNQKWWLAPKSDTDVTLILNKLREYDKKLRPDIGIKPTVIDVDIYVNSIGPVSSINMEYQIDIFF 98
F7HI54|GABRG3_Macaca_mulatta MAPKLLLLLLCLFSLGHARSRKV--EED EYEDSSSNQKWWLAPKSDTDVTLILNKLREYDKKLRPDIGIKPTVIDVDIYVNSIGPVSSINMEYQIDIFF 98
P28473|GABRG3_Rattus_norvegicus MAAKLLLLLLCLFSLGHARSRRV--EED DSEDSPSNQKWWLAPKSDTDVTLILNKLREYDKKLRPDIGIKPTVIDVDIYVNSIGPVSSINMEYQIDIFF 98
P27681|GABRG3_Mus_musculus MAAKLLLLLLCLFSLGHARSRRV--EED ENEDSPSNQKWWLAPKSDTDVTLILNKLREYDKKLRPDIGIKPTVIDVDIYVNSIGPVSSINMEYQIDIFF 98
F1PHI6|GABRG3_Canis_lupus_familiaris MAPELLLLLLCLSGVGHARSRKV--EED EYEDSSSNQKWWLAPKSDTDVTLILNKLREYDKKLRPDIGIKPTVIDVDIYVNSIGPVSSINMEYQIDIFF 98
XP_009300843.1|GABRG3_Danio_rerio MTKKFLFYFLLLVYFRACSTFASDDDEYDDVIVNQ--MLAPKTHETDAQILNKLREYDKKLRPDIGVKTVIDVDIYVNSIGPVSSINMEYQIDIFF 98
XP_024838027.1|GABRG3_Bos_taurus MAPKLLLLLLCLLGLHARTRKV--EED EYEDSSSNQKWWLAPKSDTDVTLILNKLREYDKKLRPDIGIKPTVIDVDIYVNSIGPVSSINMEYQIDIFF 98
XP_044926358.1|GABRG3_Mustela_putorius_furo -----MVKLKLQAHNE----- 12
1.....10.....20.....30.....40.....50.....60.....70.....80.....90.....100

Q99928|GABRG3_Homo_sapiens AQTWTD SRLRFNSTMKILTLNSNMVGLIWIPTIFRNSKTAEAHWITTPNQLLRWINDGKILYTLRRLTINAECQLQHNFPDDEHSCPLIFSSYGPKEE 198
A0A2R9BD98|GABRG3_Pan_paniscus AQTWTD SRLRFNSTMKILTLNSNMVGLIWIPTIFRNSKTAEAHWITTPNQLLRWINDGKILYTLRRLTINAECQLQHNFPDDEHSCPLIFSSYGPKEE 180
A0A2I3TTK9|GABRG3_Pan_troglodytes AQTWTD SRLRFNSTMKILTLNSNMVGLIWIPTIFRNSKTAEAHWITTPNQLLRWINDGKILYTLRRLTINAECQLQHNFPDDEHSCPLIFSSYGPKEE 198
F7HI54|GABRG3_Macaca_mulatta AQTWTD SRLRFNSTMKILTLNSNMVGLIWIPTIFRNSKTAEAHWITTPNQLLRWINDGKILYTLRRLTINAECQLQHNFPDDEHSCPLIFSSYGPKEE 198
P28473|GABRG3_Rattus_norvegicus AQTWTD SRLRFNSTMKILTLNSNMVGLIWIPTIFRNSKTAEAHWITTPNQLLRWINDGKILYTLRRLTINAECQLQHNFPDDEHSCPLIFSSYGPKEE 198
P27681|GABRG3_Mus_musculus AQTWTD SRLRFNSTMKILTLNSNMVGLIWIPTIFRNSKTAEAHWITTPNQLLRWINDGKILYTLRRLTINAECQLQHNFPDDEHSCPLIFSSYGPKEE 198
F1PHI6|GABRG3_Canis_lupus_familiaris AQTWTD SRLRFNSTMKILTLNSNMVGLIWIPTIFRNSKTAEAHWITTPNQLLRWINDGKILYTLRRLTINAECQLQHNFPDDEHSCPLIFSSYGPKEE 198
XP_009300843.1|GABRG3_Danio_rerio AQTWTD SRLRFNSTMKILTLNSNMVGLIWIPTIFRNSKTSADSHWITTPNQLLRWINDGKILYTLRRLTINAECQLQHNFPDDEHSCPLIFSSYGPKEE 198
XP_024838027.1|GABRG3_Bos_taurus AQTWTD SRLRFNSTMKILTLNSNMVGLIWIPTIFRNSKTAEAHWITTPNQLLRWINDGKILYTLRRLTINAECQLQHNFPDDEHSCPLIFSSYGPKEE 198
XP_044926358.1|GABRG3_Mustela_putorius_furo -----WRDG----- 21
.....110.....120.....130.....140.....150.....160.....170.....180.....190.....200

Q99928|GABRG3_Homo_sapiens MIYRWRKNSVEAADQKSWRLYQDFDMGLRNTTEIVTTSAGDYVVMITVFELSRRMGYFTIQT YIP CILTVVLSWVSFWIKKDATPARTAL----- 288
A0A2R9BD98|GABRG3_Pan_paniscus MIYRWRKNSVEAADQKSWRLYQDFDMGLRNTTEIVTTSAGDYVVMITVFELSRRMGYFTIQT YIP CILTVVLSWVSFWIKKDATPARTAL----- 280
A0A2I3TTK9|GABRG3_Pan_troglodytes MIYRWRKNSVEAADQKSWRLYQDFDMGLRNTTEIVTTSAGDYVVMITVFELSRRMGYFTIQT YIP CILTVVLSWVSFWIKKDATPARTAL----- 278
F7HI54|GABRG3_Macaca_mulatta MIYRWRKNSVEAADQKSWRLYQDFDMGLRNTTEIVTTSAGDYVVMITVFELSRRMGYFTIQT YIP CILTVVLSWVSFWIKKDATPARTAL----- 288
P28473|GABRG3_Rattus_norvegicus MIYRWRKNSVEAADQKSWRLYQDFDMGLRNTTEIVTTSAGDYVVMITVFELSRRMGYFTIQT YIP CILTVVLSWVSFWIKKDATPARTAL----- 288
P27681|GABRG3_Mus_musculus MIYRWRKNSVEAADQKSWRLYQDFDMGLRNTTEIVTTSAGDYVVMITVFELSRRMGYFTIQT YIP CILTVVLSWVSFWIKKDATPARTAL----- 288
F1PHI6|GABRG3_Canis_lupus_familiaris MIYRWRKNSVEAADQKSWRLYQDFDMGLRNTTEIVTTSAGDYVVMITVFELSRRMGYFTIQT YIP CILTVVLSWVSFWIKKDATPARTAL----- 288
XP_009300843.1|GABRG3_Danio_rerio MIYKWRKNSVQAADQKSWRLYQDFDMGLRNTTEIVTTSAGDYVVMITVFELSRRMGYFTIQT YIP CILTVVLSWVSFWIKKDATPARTALVSCFKSMSCF 298
XP_024838027.1|GABRG3_Bos_taurus MIYRWRKNSVEAADQKSWRLYQDFDMGLRNTTEIVTTSAGDYVVMITVFELSRRMGYFTIQT YIP CILTVVLSWVSFWIKKDATPARTAL----- 288
XP_044926358.1|GABRG3_Mustela_putorius_furo MIYRWRKNSVEAADQKSWRLYQDFDMGLRNTTEIVTTSAGDYVVMITVFELSRRMGYFTIQT YIP CILTVVLSWVSFWIKKDATPARTAL----- 111
.....210.....220.....230.....240.....250.....260.....270.....280.....290.....300

Q99928|GABRG3_Homo_sapiens -----GITT VLTMTTSLTIARNSLPRVSYVTAMD L FVTVCFLFVFAALMEYATLNYYSS--CRKPTT T KKT T SLLH P D S S R W I P E R I S L Q A P S N Y S L L D 380
A0A2R9BD98|GABRG3_Pan_paniscus -----GITT VLTMTTSLTIARNSLPRVSYVTAMD L FVTVCFLFVFAALMEYATLNYYSS--CRKPTT T KKT T SLLH P D S S R W I P E R I S L Q A P S N Y S L L D 362
A0A2I3TTK9|GABRG3_Pan_troglodytes -----GITT VLTMTTSLTIARNSLPRVSYVTAMD L FVTVCFLFVFAALMEYATLNYYSS--CRKPTT T KKT T SLLH P D S S R W I P E R I S L Q A P S N Y S L L D 380
F7HI54|GABRG3_Macaca_mulatta -----GITT VLTMTTSLTIARNSLPRVSYVTAMD L FVTVCFLFVFAALMEYATLNYYSS--CRKPTT T KKT T SLLH S D S S R W I P E R I S L Q A P S N Y S L L D 380
P28473|GABRG3_Rattus_norvegicus -----GITT VLTMTTSLTIARNSLPRVSYVTAMD L FVTVCFLFVFAALMEYATLNYYSS--CRKPTI R K K T T S L L H P D S T R W I P D R I S L Q A P S N Y S L L D 380
P27681|GABRG3_Mus_musculus -----GITT VLTMTTSLTIARNSLPRVSYVTAMD L FVTVCFLFVFAALMEYATLNYYSS--CRKPTI R K K K T S L L H P D S T R W I P D R I S L Q A P S N Y S L L D 380
F1PHI6|GABRG3_Canis_lupus_familiaris -----GITT VLTMTTSLTIARNSLPRVSYVTAMD L FVTVCFLFVFAALMEYATLNYYSS--CRKPTT T K K K T S L L H P D S S R W I H E R I S L Q A P S N Y S L L D 380
XP_009300843.1|GABRG3_Danio_rerio GKCHCCG GITT VLTMTTSLTIARNSLPRVSYVTAMD L FVTVCFLFVFAALMEYATLNYYSS--ARRPT CNKTKR-----SNYSVLD 378
XP_024838027.1|GABRG3_Bos_taurus -----GITT VLTMTTSLTIARNSLPRVSYVTAMD L FVTVCFLFVFAALMEYATLNYYSS--CRKPTT T K K K T S L L H A D S S R W I H E R I S L Q A P S N Y S L L D 380
XP_044926358.1|GABRG3_Mustela_putorius_furo -----GITT VLTMTTSLTIARNSLPRVSYVTAMD L FVTVCFLFVFAALMEYATLNYYSS--CRKPTT T K K K T S L L H P D S S R W I H E R I S L Q A P S N Y S L L D 203
.....310.....320.....330.....340.....350.....360.....370.....380.....390.....400

Q99928|GABRG3_Homo_sapiens MRPPPTAMITLNNSVYVQEFEDTCVYECLDGKDCQSFFCCYECKSGSWRKGRIHIDILELDSYSRVFFPTSFLLFNLVYVWGYLYL 467
A0A2R9BD98|GABRG3_Pan_paniscus MRPPPPAMITLNNSVYVQEFEDTCVYECLDGKDCQSFFCCYECKSGSWRKGRIHIDILELDSYSRVFFPTSFLLFNLVYVWGYLYL 449
A0A2I3TTK9|GABRG3_Pan_troglodytes MRPPPPAMITLNNSVYVQEFEDTCVYECLDGKDCQSFFCCYECKSGSWRKGRIHIDILELDSYSRVFFPTSFLLFNLVYVWGYLYL 467
F7HI54|GABRG3_Macaca_mulatta MRPPPPAMITLNNSVYVQEFEDTCVYECLDGKDCQSFFCCYECKSGSWRKGRIHIDILELDSYSRVFFPTSFLLFNLVYVWGYLYL 467
P28473|GABRG3_Rattus_norvegicus MRPPPPVMITLNNSMYVQEFEDTCVYECLDGKDCQSFFCCYECKSGSWRRGRIHIDVSELDYSYRVFFPTSFLLFNLVYVWGYLYL 467
P27681|GABRG3_Mus_musculus MRPPPPVMITLNNSMYVQEFEDTCVYECLDGKDCQSFFCCYECKSGSWRRGRIHIDVSELDYSYRVFFPTSFLLFNLVYVWGYLYL 467
F1PHI6|GABRG3_Canis_lupus_familiaris MRPPPPAMITLNNSVYVQEFEDTCVYECLDGKDCQSFFCCYECKSGSWRKGRIHIDILELDSYSRVFFPTSFLLFNLVYVWGYLYL 467
XP_009300843.1|GABRG3_Danio_rerio VGPPPT-VITLNNSMYVQEFDDACVYECLDGKDCQSFFCCYECKDGAWRKRGRVHIDILELDAYSRVFFPTSFLLFNLVYVWGYLYL 464
XP_024838027.1|GABRG3_Bos_taurus MRPPPPVMITLNNSVYVQEFEDTCVYECLDGKDCQSFFCCYECKSGSWRKGRIHIDILELDSYSRVFFPTSFLLFNLVYVWGYLYL 467
XP_044926358.1|GABRG3_Mustela_putorius_furo MRPPPPAMITLNNSVYVQEFEDTCVYECLDGKDCQSFFCCYECKSGSWRKGRIHIDILELDSYSRVFFPTSFLLFNLVYVWGYLYL 290
.....410.....420.....430.....440.....450.....460.....470.....480.....

000591|GABRP_Homo_sapiens -----MNYSLHLAFV---CLSLFTERMCIQGSQFNVEVGRSDKLSLPGFENLTAGYNKFLRPNFGG 58
A0A2R8ZJ77|GABRP_Pan_paniscus -----MNYSLHLAFV---CLSLFTERMCIQGNQFNVEVGRSDKLSLPGFENLTAGYNKFLRPNFGG 58
A0A2J8LXV6|GABRP_Pan_troglodytes -----MNYSLHLAFV---CLSLFTERMCIQGNQFNVEVGRSDKLSLPGFENLTAGYNKFLRPNFGG 58
A0A1D5QJZ6|GABRP_Macaca_mulatta -----MNYSLHLAFV---CLSLFTERMCIQGNQFNVEVGRSDKLSLPGFENLTAGYNKFLRPNFGG 58
O09028|GABRP_Rattus_norvegicus -----MSYSLYLAFV---CLNLLAQRMCIQGNQFNVEVGRSDKLSLPGFENLTAGYNKFLRPNFGG 58
Q8QZW7|GABRP_Mus_musculus -----MSYSLYLAFV---CLNLLAQRMCIQGNQFNVEVGRSDKLSLPGFENLTAGYNKFLRPNFGG 58
E2RS87|GABRP_Canis_lupus_familiaris MKLTIQNRLGRSHRRPWARGEROSIGDSYFGLSLRECLINMKYSLYLTFM---CLSLFTRPRICVQGNQFNIEVSRSDKLSLPGFENLTAGYNKFLRPNFGG 97
XP_021330000.1|GABRP_Danio_riero -----MICISDLHSYQSSGLHYHRMLLNLLFWTSLFLLLIINGERGFYGNQYG---EWNDSQLQPTTIQKLMKGYNRYLRPNFNE 75
Q5EA06|GABRP_Bos_taurus -----MKRSLHLTFV---CLSLFGARMCVQGNQFNIEVSRSDKLSLPGFENLTAGYNKFLRPNFGG 58
M3YN80|GABRP_Mustela_putorius_furo -----MKYSLPLTFV---CLSLFTRPRICVQGNQFNIEVSRSDKLSLPGFENLTAGYNKFLRPNFGG 58
1.....10.....20.....30.....40.....50.....60.....70.....80.....90.....100

000591|GABRP_Homo_sapiens EPVQIALTLDIASISSISESNMDYTATIYLRQRWMDQRLVFEFGNKSFTLDARLVEFLWVDPDYIIVESKKSFLHEVTVGNRLIRLFSNGTIVLYALRITTTV 158
A0A2R8ZJ77|GABRP_Pan_paniscus EPVQIALTLDIASISSISESNMDYTATIYLRQRWMDQRLVFEFGNKSFTLDARLVEFLWVDPDYIIVESKKSFLHEVTVGNRLIRLFSNGTIVLYALRITTTV 158
A0A2J8LXV6|GABRP_Pan_troglodytes EPVQIALTLDIASISSISESNMDYTATIYLRQRWMDQRLVFEFGNKSFTLDARLVEFLWVDPDYIIVESKKSFLHEVTVGNRLIRLFSNGTIVLYALRITTTV 158
A0A1D5QJZ6|GABRP_Macaca_mulatta EPVQIALTLDIASISSISESNMDYTATIYLRQRWMDQRLVFEFGNKSFTLDARLVEFLWVDPDYIIVESKKSFLHEVTVGNRLIRLFSNGTIVLYALRITTTV 158
O09028|GABRP_Rattus_norvegicus DPVRIALTLDIASISSISESNMDYTATIYLRQRWTDPRLVFEFGNKSFTLDARLVEFLWVDPDYIIVESKKSFLHEVTVGNRLIRLFSNGTIVLYALRITTTV 158
Q8QZW7|GABRP_Mus_musculus DPVRIALTLDIASISSISESNMDYTATIYLRQRWTDPRLVFEFGNKSFTLDARLVEFLWVDPDYIIVESKKSFLHEVTVGNRLIRLFSNGTIVLYALRITTTV 158
E2RS87|GABRP_Canis_lupus_familiaris EPVQIALTMDIASISSISESNMDYTATIYLRQRWTDQRLVFEFGNKSFTLDARLVEFLWVDPDYIIVESKKSFLHEVTVGNRLIRLFSNGTIVLYALRITTTV 197
XP_021330000.1|GABRP_Danio_riero GPVEIGMSLDIASIDAISEINMDYTATIFLRQRWRDRLIFPGNESLIDGRLVSLWIPDFTFIPDSKRSFLHDVTIVGNRLIRLFSNGTIVLYALRITATI 175
Q5EA06|GABRP_Bos_taurus EPVQIALTLDIASISSISESNMDYTATIYLRQRWTDQRLVFEFGNKSFTLDARLVEFLWVDPDYIIVESKKSFLHEVTVGNRLIRLFSNGTIVLYALRITTTV 158
M3YN80|GABRP_Mustela_putorius_furo EPVQIALTLDIASISSISESNMDYTATIYLRQRWTDQRLVFEFGNKSFTLDARLVEFLWVDPDYIIVESKKSFLHEVTVGNRLIRLFSNGTIVLYALRITTTV 158
.....110.....120.....130.....140.....150.....160.....170.....180.....190.....200

000591|GABRP_Homo_sapiens ACNMDLSKYPMDTQTKLQLESWGVDGNDVEFTWLRGNSVVRGLEHLRLAQYTIERYFTLVTRSQQETGNYTRLVLOFELRRNVLYFILETYVPSSTFLV 258
A0A2R8ZJ77|GABRP_Pan_paniscus ACNMDLSKYPMDTQTKLQLESWGVDGNDVEFTWLRGNSVVRGLEHLRLAQYTIERYFTLVTRSQQETGNYTRLVLOFELRRNVLYFILETYVPSSTFLV 258
A0A2J8LXV6|GABRP_Pan_troglodytes ACNMDLSKYPMDTQTKLQLESWGVDGNDVEFTWLRGNSVVRGLEHLRLAQYTIERYFTLVTRSQQETGNYTRLVLOFELRRNVLYFILETYVPSSTFLV 258
A0A1D5QJZ6|GABRP_Macaca_mulatta ACNMDLSKYPMDTQTKLQLESWGVDGNDVEFTWLRGNSVVRGLEHLRLAQYTIERYFTLVTRSQQETGNYTRLVLOFELRRNVLYFILETYVPSSTFLV 258
O09028|GABRP_Rattus_norvegicus TCNMDLSKYPMDTQTKLQLESWGVDGNDVEFSWLRGNSVVRGLEHLRLAQYTIQYFTLVTVSQQETGNYTRLVLOFELRRNVLYFILETYVPSSTFLV 258
Q8QZW7|GABRP_Mus_musculus TCNMDLSKYPMDTQTKLQLESWGVDGNDVEFSWLRGNSVVRGLEHLRLAQYTIQYFTLVTVSQQETGNYTRLVLOFELRRNVLYFILETYVPSSTFLV 258
E2RS87|GABRP_Canis_lupus_familiaris ACNMDLSKYPMDTQTKLQLESWGVDGNDVEFSWLRGNSVVRGLEHLRLAQYTIQRYFTLVTRSQQETGNYTRLVLOFELRRNVLYFILETYVPSSTFLV 297
XP_021330000.1|GABRP_Danio_riero ACNMDLTKYPMDRQECTLQLESWGYNLEDVVFYWTRGNSVVKGLDTRLRLAQYSVESYYSVTKAVYETGLYPKLILHFALRRNVLYFFILETYVPSSTLLV 275
Q5EA06|GABRP_Bos_taurus ACNMDLSKYPMDTQTKLQLESWGVDGNDVEFSWLRGNSVVRGLEHLRLAQYTIQYFTLVTRSQQETGNYTRLVLOFELRRNVLYFILETYVPSSTFLV 258
M3YN80|GABRP_Mustela_putorius_furo ACNMDLSKYPMDTQTKLQLESWGVDGNDVEFSWLRGNSVVRGLEHLRLAQYTIQRYFTLVTRSQQETGNYTRLVLOFELRRNVLYFILETYVPSSTFLV 258
.....210.....220.....230.....240.....250.....260.....270.....280.....290.....300

000591|GABRP_Homo_sapiens LSWVSFWISLDSVPARTCIGVTTVLSMTTLMIGSRTSLPNTNCFIKAIDVYLGICFSFVFGALLEYAVAHYSSLOQMAAKD--RGTTKVEVEVSIITNIIIN 356
A0A2R8ZJ77|GABRP_Pan_paniscus LSWVSFWISLDSVPARTCIGVTTVLSMTTLMIGSRTSLPNTNCFIKAIDVYLGICFSFVFGALLEYAVAHYSSLOQMAAKD--RGTTKVEVEVSIITNIIIN 356
A0A2J8LXV6|GABRP_Pan_troglodytes LSWVSFWISLDSVPARTCIGVTTVLSMTTLMIGSRTSLPNTNCFIKAIDVYLGICFSFVFGALLEYAVAHYSSLOQMAAKD--RGTTKVEVEVSIITNIIIN 356
A0A1D5QJZ6|GABRP_Macaca_mulatta LSWVSFWISLDSVPARTCIGVTTVLSMTTLMIGSRTSLPNTNCFIKAIDVYLGICFSFVFGALLEYAVAHYSSLOQMAAKD--RGTTKVEVEVSIITNIIIN 356
O09028|GABRP_Rattus_norvegicus LSWVSFWISLDSVPARTCIGVTTVLSMTTLMIGSRTSLPNTNCFIKAIDVYLGICFSFVFGALLEYAVAHYSSLOQMAVVD--RGPAKDSEEVNITNIIIN 356
Q8QZW7|GABRP_Mus_musculus LSWVSFWISLDSVPARTCIGVTTVLSMTTLMIGSRTSLPNTNCFIKAIDVYLGICFSFVFGALLEYAVAHYSSLOQMAVVD--RGPAKDSEEVNITNIIIN 356
E2RS87|GABRP_Canis_lupus_familiaris LSWVSFWISLDSVPARTCIGVTTVLSMTTLMIGSRTSLPNTNCFIKAIDVYLGICFSFVFGALLEYAVAHYSSLOQMAAKD--RGTSKVEVEVSIITNIIIN 395
XP_021330000.1|GABRP_Danio_riero LSWVSFWISQSVPARTCIGVTTVLTMTTLMMGARTSLPNANCFIKAIDVYLGICFTFIFGALLEYACAHFCTMQHQTIIDVRELLKFEFESNGTTHLV 375
Q5EA06|GABRP_Bos_taurus LSWVSFWISLDSVPARTCIGVTTVLSMTTLMIGSRTSLPNTNCFIKAIDVYLGICFSFVFGALLEYAVAHYSSLOQMAAKD--RGKAKEVEEVNITNIIIN 356
M3YN80|GABRP_Mustela_putorius_furo LSWVSFWISLDSVPARTCIGVTTVLSMTTLMIGSRTSLPNTNCFIKAIDVYLGICFSFVFGALLEYAVAHYSSLOQMAAKD--RGTAKVEVEEVNITNIIIN 356
.....310.....320.....330.....340.....350.....360.....370.....380.....390.....400

000591|GABRP_Homo_sapiens SSISFFKRKISFASIEISDN---VDYSDLTMTKTSK-FKFVFRKMGRIVDY-FITIQNSNVDRYSKLLFPLIFMLANVFYWAYMYF 440
A0A2R8ZJ77|GABRP_Pan_paniscus SSISFFKRKISFASIEISDN---VDYSDLTMTKTSK-FKFVFRKMGRIVDY-FITIQNSNVDRYSKLLFPLIFMLANVFYWAYMYF 440
A0A2J8LXV6|GABRP_Pan_troglodytes SSISFFKRKISFASIEISDN---VDYSDLTMTKTSK-FKFVFRKMGRIVDY-FITIQNSNVDRYSKLLFPLIFMLANVFYWAYMYF 440
A0A1D5QJZ6|GABRP_Macaca_mulatta SSISFFKRKISFASIEISDN---VDYSDLTMTKTSK-FKFVFRKMGRIVDY-FITIQNSNVDRYSKLLFPLIFMLANVFYWAYMYF 440
O09028|GABRP_Rattus_norvegicus SSISFFKRKISFASIEISDN---VNYSDLTMTKASDK-FKFVFRKIGRIIDY-FITIQNSNVDRYSKLLFPLIFMLANVFYWAYMYF 440
Q8QZW7|GABRP_Mus_musculus SSISFFKRKISFASIEISDN---VNYSDLTMTKASDK-FKFVFRKIGRIIDY-FITIQNSNVDRYSKLLFPLIFMLANVFYWAYMYF 440
E2RS87|GABRP_Canis_lupus_familiaris SSISFFKRKISFASIEISDN---VDYSDLTMTKTSK-FKLVRDKMGRIVDY-FITIQNSNVDRYSKLLFPLIFMLANVFYWAYMYF 479
XP_021330000.1|GABRP_Danio_riero SSMFPRKMKTESDKQEKPEQIVTCEENEAIEQTKKEGCGGLTTVKQMSKRAASMMVSNPHNIDREARILFPMAPLLINIFYWLYYLLF 464
Q5EA06|GABRP_Bos_taurus SSISFFKRKISFASIEISDN---VDYSDLTMTKTSK-FKFVFRDKLGRIVDY-FITIQNSNVDRYSKLLFPLIFMLANVFYWAYMYF 440
M3YN80|GABRP_Mustela_putorius_furo SSISFFKRKISFASIEISDN---VDYSDLTMTKTSK-FKFVFRDKMGRIVDY-FITIQNSNVDRYSKLLFPLIFMLANVFYWAYMYF 440
.....410.....420.....430.....440.....450.....460.....470.....480.....

Q9UN88|GABRQ_Homo_sapiens MGIRGMLRAAVILLIRTLWLAEGNYPSPPIPKFHFHFEFSSAVPEVVLNLFNCKNCANEAVVQKILDVRLSRDYVRLRPNFGGAPVPVVRISIVYVTSIEQISEM 100
A0A2R9ALH2|GABRQ_Pan_paniscus MGIRGMLRAAVILLIRTLWLAEGNYPSPPIPKFHFHFEFSSAVPEVVLNLFNCKNCANEAVVQKILDVRLSRDYVRLRPNFGGAPVPVVRISIVYVTSIEQISEM 100
A0A6D2XJH7|GABRQ_Pan_troglodytes MGIRGMLRAAVILLIRTLWLAEGNYPSPPIPKFHFHFEFSSAVPEVVLNLFNCKNCANEAVVQKILDVRLSRDYVRLRPNFGGAPVPVVRISIVYVTSIEQISEM 100
F7F4H9|GABRQ_Macaca_mulatta MGIRGMLRAAVILLIRTLWLAEGNYPSPPIPKFHFHFEFSSAVPEVVLNLFNCKNCANEAVVQKILDVRLSRDYVRLRPNFGGAPVPVVRISIVYVTSIEQISEM 100
M3YJY6|GABRQ_Mustela_putorius_furo MGIRGMLRAAVILLIRTLWLAESHDPSPTEPFHFELSPVPEVVLNLFNCKNCANEAVVHKILDVRLSKYDVRLRPNFGGAPVPVGISIMYVSSIEQISEM 100
G3V875|GABRQ_Rattus_norvegicus ----MLRAAALLLLIRTLWLAESNDPSPTPKFHFELSSMPEVILDLFNCKNCANEAVVQKILDVRLSTYDVRLRPNFGGAPVPVSVISIVYVSSIEQISEI 95
Q9JLFL1|GABRQ_Mus_musculus MGIRGMLRAAALLLLIRTLWLAESNGPSPPIPKFHFELSSSTEPEVILDLFNCKNCANEAVVQKILDVRLSTYDVRLRPNFGGAPVPVSVISIVYVSSIEQISEI 100
F6XRK3|GABRQ_Canis_lupus_familiaris MGIRGILRAAVLLLLIRTLWLAEGNEPSPTPKFHFELSPVPEVILNLFNCKKCANEGVVHKILDVRLSNYDVRLRPNFGGAPVPVGVSMYVSSIEQISEM 100
E1BJH4|GABRQ_Bos_taurus MSIRGMLRAAVFLLLRITWLAEGSDLSSTPKFHFELSSTVPEVVLNLFDCNCKANAEATVHKILDVRLSNYDSRLRPNFGGTPVPVGVSIYVSSIEQISEV 100
F1Q4Y6|GABRB4_Danio_riero -----MLGPQEDKLCGIVSALAAL-SFVCFQSSSTGSTGI-SVAKTTVDKLLKGYDIRLRPFDGGPPVIVGMSINIASIDSISEV 79
1.....10.....20.....30.....40.....50.....60.....70.....80.....90.....100

Q9UN88|GABRQ_Homo_sapiens NMDYITIMFFHQTWKDSRLAYEYETTLNLLDLYRMHEKLVWVPCYFNLKDAFVHDVTVENRVFQLHPDGTVRYGIRLTTTAAACSLDLHKFPMDKQACNLV 200
A0A2R9ALH2|GABRQ_Pan_paniscus NMDYITIMFFHQTWKDSRLAYEYETTLNLLDLYRMHEKLVWVPCYFNLKDAFVHDVTVENRVFQLHPDGTVRYGIRLTTTAAACSLDLHKFPMDKQACNLV 200
A0A6D2XJH7|GABRQ_Pan_troglodytes NMDYITIMFFHQTWKDSRLAYEYETTLNLLDLYRMHEKLVWVPCYFNLKDAFVHDVTVENRVFQLHPDGTVRYGIRLTTTAAACSLDLHKFPMDKQACNLV 200
F7F4H9|GABRQ_Macaca_mulatta NMDYITIMFFHQTWKDSRLAYEYETTLNLLDLYRMHEKLVWVPCYFNLKDAFVHDVTVENRVFQLHPDGTVRYGIRLTTTAAACSLDLHKFPMDKQACNLV 200
M3YJY6|GABRQ_Mustela_putorius_furo TMDYITIMFFHQTWKDPRLAYHETNLNLLDLYRMLEKLVWVPCYFNLKDAFVHDVTVENRVFQLHPDGTVRYGMRLTTTAAACSLDLQKFPMDKQACKLE 200
G3V875|GABRQ_Rattus_norvegicus NMDYITIMFLHQTWKDTRLAYEYETNLNLLDLYRMHEKLVWVPCYFVNSKDAFVHDVTVENRVFQLHPDGTVQYGIIRLTTTAAACSLDLQKFPMDKQACKLE 195
Q9JLFL1|GABRQ_Mus_musculus NMDYITIMFLHQTWKDTRLAYEYETNLNLLDLYRMHEKLVWVPCYFVNSKDAFVHDVTVENRVFQLHPDGTVRYGIRLTTTAAACSLDLQKFPMDKQACKLE 200
F6XRK3|GABRQ_Canis_lupus_familiaris TMDYITIMFFHQTWKDPRLAYHETNLNLLDLYRMLEKLVWVPCYFNLKDAFVHDVTVENRVFQLHPDGTVRYGMRLTTTAAACSLDLQKFPMDKQACKLE 200
E1BJH4|GABRQ_Bos_taurus TMDYITIMFFHQTWKDPRLAYHETNLNLLDLYRLFELKLVWVPCYFNLKDAFVHDVTVENRVFQLHPDGTVRYGIRLTTTAAACSMNLEKFPMDKQACKLE 200
F1Q4Y6|GABRB4_Danio_riero NMDYITIMYFQOSWRDKRLAYAEMLNLLDNRVADQLWLPTDYFLNDDKKSFLHGVVKNRMRIRLHPDGTVLYGLRITTTAAACMMDLRRYPLDEONCTLE 179
.....110.....120.....130.....140.....150.....160.....170.....180.....190.....200

Q9UN88|GABRQ_Homo_sapiens VESYGYTVEDIILFWDDNGNAIHMTEELHIPQFTFLGRITTSKEVYFYTGSIYRILILKFOVQREVNSYLQVYVWPTVLTITTSWISFWMNYDSSAARVTI 300
A0A2R9ALH2|GABRQ_Pan_paniscus VESYGYTVEDIILFWDDNGNAIHMTEELHIPQFTFLGRITTSKEVYFYTGSIYRILILKFOVQREVNSYLQVYVWPTVLTITTSWISFWMNYDSSAARVTI 300
A0A6D2XJH7|GABRQ_Pan_troglodytes VESYGYTVEDIILFWDDNGNAIHMTEELHIPQFTFLGRITTSKEVYFYTGSIYRILILKFOVQREVNSYLQVYVWPTVLTITTSWISFWMNYDSSAARVTI 300
F7F4H9|GABRQ_Macaca_mulatta VESYGYTVEDIILFWDDNGNAIHMTEELHIPQFTFLGRITTSKEVYFYTGSIYRILILKFOVQREVNSYLQVYVWPTVLTITTSWISFWMNYDSSAARVTI 300
M3YJY6|GABRQ_Mustela_putorius_furo VESYGYTVEDIVLWEGDGNAIQGTEQLHIPQFSFLGKTMSSKEMAFYTGSIYRILILKFLVQREITSYLQVYVWPTVLTITTSWISFWMNYESSAARVTI 300
G3V875|GABRQ_Rattus_norvegicus VESYGYTVEDIVLSWE-DDNAIHITDELHIPQYTYLGRITTSKEVYFYTGSIYRILILKFOVQREVNSYLQVYVWPTVLTITTSWISFWMNYDSSAARVTI 294
Q9JLFL1|GABRQ_Mus_musculus VESYGYTVEDIVLSWE-DDNAIHITDGLHIPQYTYLGRITTSKEVYFYTGSIYRILILKFOVQREVNSYLQVYVWPTVLTITTSWISFWMNYDSSAARVTI 299
F6XRK3|GABRQ_Canis_lupus_familiaris VESYGYTVEDIVLWEGNGNAIQGTEKLIHIPQFSFLGKTMSSKEVFYTGSIYRILILKFLVQREVITSYLQVYVWPTVLTITTSWISFWMNYESSAARVTI 300
E1BJH4|GABRQ_Bos_taurus VESYGYTVDDIVLWEGSGNAVQGTEKLIHIPQFSFLGKITTSKEVFYTGSIYRILILKFLVQREVITSYLQVYVWPTVLTITTSWISFWMNYESSAARVTI 300
F1Q4Y6|GABRB4_Danio_riero IESYGYTTDDIVFFWQGGDNAVIGVDKLELPQFSIVELRLVSRVRFITGSIYRILILKFLVQREVITSYLQVYVWPTVLTITTSWISFWMNYDASARVAL 279
.....210.....220.....230.....240.....250.....260.....270.....280.....290.....300

Q9UN88|GABRQ_Homo_sapiens GLTSMILILTTIDSHLRDCLPNISCIKAIDIYILVCLFFVFLSLEYVYINYLFFYSR-GPRRQPRRRRRRRRV-IAHYRYQQVAVG----- 383
A0A2R9ALH2|GABRQ_Pan_paniscus GLTSMILILTTIDSHLRDCLPNISCIKAIDIYILVCLFFVFLSLEYVYINYLFFYSR-GPRRQPRRRRRRRRV-IAHYRYQQVAVG----- 383
A0A6D2XJH7|GABRQ_Pan_troglodytes GLTSMILILTTIDSHLRDCLPNISCIKAIDIYILVCLFFVFLSLEYVYINYLFFYSR-GPRRQPRRRRRRRRV-IAHYRYQQVAVG----- 383
F7F4H9|GABRQ_Macaca_mulatta GLTSMILILTTIDSHLRDCLPNISCIKAIDIYILVCLFFVFLSLEYVYINYLFFYSR-GPRRQPRRRRRRRRV-IAHYRYQQVAVG----- 383
M3YJY6|GABRQ_Mustela_putorius_furo GLTSMILILNAINSHLRDCLPVACIKAIIDIYMVVCFVFLSLEYVYINYLFFYSRGRSRRTQRRRRARRV-MARYRYQEVTVQ----- 384
G3V875|GABRQ_Rattus_norvegicus GLTSMILVLTIDSHMRDCLPHISCIKAIDIYILVCLFFVFLSLEYVYINYLFFFSQ-APRRNHRRRCRKRPRV-VARYRYQEVVVA----- 377
Q9JLFL1|GABRQ_Mus_musculus GLTSMILVLTIDSHMRDCLPHISCIKAIDIYILVCLFFVFLSLEYVYINYLFFFSQ-VPRRNHRRRCRKRPRV-VARYRYQEVVVA----- 382
F6XRK3|GABRQ_Canis_lupus_familiaris GLTSMILILNAINSHLRDCLPVACIKAIIDIYMVVCFVFLSLEYVYINYLFFYSRGRSRRNRRRRRRARRV-MARYRYREVMQLQPFANRRSQEEMILSV 399
E1BJH4|GABRQ_Bos_taurus GLTSMILILNAINSHLRNCFPQFSCIKAIIDIYMVVCFVFLSLEYVYINYLFFYSRGRSRRSRHSQRQLRRALRV-MERYRYREVIHV----- 384
F1Q4Y6|GABRB4_Danio_riero GVITVLTMTTINSHLRETLPKIPYVKAIDVYLMGCFVFLALLEYAFVNYVFFGR-GPQQCKKINERLNKANERPRYEEKRLR----- 363
.....310.....320.....330.....340.....350.....360.....370.....380.....390.....400

Q9UN88|GABRQ_Homo_sapiens -----NVQDGLINVEDGV-----SSLPIIPAQAPLASPELSGLSTSTSEQAQLATSELSPLTS 437
A0A2R9ALH2|GABRQ_Pan_paniscus -----NVQDGLINVEDGV-----SSLPIIPAQAPLASPELSGLSTSTSEQAQLATSELSPLTS 437
A0A6D2XJH7|GABRQ_Pan_troglodytes -----NVQDGLINVEDGV-----SSLPIIPAQAPLASPELSGLSTSTSEQAQLATSELSPLTS 437
F7F4H9|GABRQ_Macaca_mulatta -----NVQDGLINVEDGV-----SSLPIIPAQAPLASPELSGLSTSTSEQAQLATSELSPLTS 437
M3YJY6|GABRQ_Mustela_putorius_furo -----SRAGDTEGDQISIEDES-----GSLSSRPVQACLASLESLSLLIPGQAPLATSELSLSS 443
G3V875|GABRQ_Rattus_norvegicus -----NVQDGLINVEDRVEDRAGPLPDSMPQAHLASQESLGLSVMFTSEEAQPLATSELSLSS 435
Q9JLFL1|GABRQ_Mus_musculus -----NVQDGLINVEDRVEDRAGPLPDSMPQAHLASQESLGLSVMFTSEEAQPLATSELSLSS 440
F6XRK3|GABRQ_Canis_lupus_familiaris EIEDTHIATVDEESPLSPLSPPPVLIHVGLANPDAINVSTISLREDQISIEDES-----GSLSSRPARACLASLESLSLLIPGQAPLATSELSLSS 495
E1BJH4|GABRQ_Bos_taurus -----TAFNDQVHLEDET-----DPPSPSPWAGLASPELSGLSLATSELSLSS 438
F1Q4Y6|GABRB4_Danio_riero -----EQDSISA-----PQS-----NTLR 379
.....410.....420.....430.....440.....450.....460.....470.....480.....490.....500


```

: . : . . : : : . : . : . :
Q9UN88|GABRQ_Homo_sapiens      LSGQAPLATGESLSDLPSTSEQARHSYG-VRFNGFQADDSIFPTEIRNRVEAHGHGVTHDHEDSNESLSSDERHGHG--PSGKPLHHGEKGVQEAGWD- 533
A0A2R9ALH2|GABRQ_Pan_paniscus LSGQAPLATGESLSDLPSTSEQARHSYG-VRFNGFQADDSIIPTEIRNRVEAHGHGVTHDHEDSNESLSSDERHGHG--PSGKPLHHGEKGVQEAGWD- 533
A0A6D2XHJ7|GABRQ_Pan_troglodytes LSGQAPLATGESLSDLPSTSEQARHSYG-VRFNGFQADDSIIPTEIRNRVEAHGHGVTHDHEDSNESLSSDERHGHG--PSGKPLHHGEKGVQEAGWD- 533
F7F4H9|GABRQ_Macaca_mulatta      LSGQAPLATGESLSDLPSTSEQARHSYG-VRFNGFQADDSIIPTEIRNRVEAHGHGVTHDHEDSNESLSSDERHGHG--PSGKPLHHGEKGVQEAGWD- 533
M3YJY6|GABRQ_Mustela_putorius_furo LSEQAWTGSRESLSDRPSTSEQALHRNG-FHFSGSETDDGVICPEIHNRAADAHGHADTRDPEDPKENLSSDESHGHG--PRGRYLLVYGHRCVQEASYS- 539
G3V875|GABRQ_Rattus_norvegicus   ASSQVQLATGESLGDLPSTSEQTLFDYT-IHFHGFLLNDSILPIKIRSHSDALG-----DEDSEESLSSEESYHGGSPTGRKLQISRCVQEASWD- 527
Q9JLF1|GABRQ_Mus_musculus        ASSQVQLATGESLSDLPSTSEQTVPECT-IHFHGFLLNDSIIPKIHRSRDACD-----DEDSEESLSSEESYHGGSPTGRKLQISRCVQEASWD- 532
F6XR33|GABRQ_Canis_lupus_familiaris LSELASLASRESLSDLPSTPEQAPHRYG-IHVNFGFENDDSVTPTEMRNLAEAHDHAEISDPEDPEENFSLDESFPVHI--PSGRPLLLYGHRRVREASCSL 592
E1BJH4|GABRQ_Bos_taurus          LSDGASLATTESLSDLPSTSEQVVHDDG-IRVNGIDVNSVVPTEIRNLAETHD-----PEEDPGESSDSDES EDNG--PSKKRLLVHGQRHVQEATYEL 530
F1Q4Y6|GABRB4_Danio_erio         YIQRRNLY-----LEEQRKVGVDAYGNILLTTLNNEVMPSPDVGVSSV-----SDSRNSVMSFDSGQVFRKPMGSR----- 446
.....510.....520.....530.....540.....550.....560.....570.....580.....590.....600

```

```

: . : . * . * : . : . : : .
Q9UN88|GABRQ_Homo_sapiens      -----L-----DDNNDKSDCLAIKEQFKCDTNSTWGLNDDDELMAHGQEKD--SSSESEDS CPPSPGCSFTEGFSFDLFPDYPVKVDKWS 611
A0A2R9ALH2|GABRQ_Pan_paniscus   -----L-----DDNNDKSDCLAIKEQFKCDTNSTWGLNDDGLMAHGQEKD--SSSESEDS CPPSPGCSFTEGFSFDLFPDYPVKVDKWS 611
A0A6D2XHJ7|GABRQ_Pan_troglodytes -----L-----DDNNDKSDCLAIKEQFKCDTNSTWGLNDDGLMAHGQEKD--SSSESEDS CPPSPGCSFTEGFSFDLFPDYPVKVDKWS 611
F7F4H9|GABRQ_Macaca_mulatta      -----L-----DDNSVKSGCLAVEEQKCDTNSTWGLNEDELMAHGHEKD--NSSESEDS CPPSPGCSFTEGFSFDLFPDYPVKVDKWS 611
M3YJY6|GABRQ_Mustela_putorius_furo -----LEEIRSLPDDIRVESGYLDLEKQLRRDLSTWSLNV DGLPGFDQDKD--SNSESDSRPPSPRCFSFSEVFSKLFDPDYPVKVDKWS 624
G3V875|GABRQ_Rattus_norvegicus   -----IDKIESLQDDISIKSWLGLDEQRKGDADSIWSLTDEELMACDQEKDSSSSSESEES CSPSPGCSFNEGFSFQLFNPNRVPKVDKWS 614
Q9JLF1|GABRQ_Mus_musculus        -----LDKIEILQDDISITSWLGLDEQCKGDADSIWSLTDEELMACDQEKD--SSSESEENCSPSPGCSFNEGFSFQLFNPNRVPKVDKWS 617
F6XR33|GABRQ_Canis_lupus_familiaris DEIRSNLNEIRSNLDEIRSLPDDIRVESGYLDLEKQLRYDL-YNWRPNAKKFMRLNRRKD--SNSESDSRPPSPGCSFTEGFSKLFDPDYPVKVDKWS 689
E1BJH4|GABRQ_Bos_taurus          QEICNT-----LRDIHSLPDDVIVESGYPDLEEQLRKRVDSTGSLHSDDFMDFDGDKD--SNSESDSNFPPSPGCSFSGKFSFDLFPDYPVKVDQCC 621
F1Q4Y6|GABRB4_Danio_erio         -----DGFSHSLDR--SAMRSTRANCLRRRS--KLKLIKIPNLTDVSTIDKWS 491
.....610.....620.....630.....640.....650.....660.....670.....680.....690.....700

```

```

*:*:*:* .*:~*~* *~:
Q9UN88|GABRQ_Homo_sapiens      RFLFPLAFGLFNIVYVWVYHMY 632
A0A2R9ALH2|GABRQ_Pan_paniscus  RFLFPLAFGLFNIVYVWVYHMY 632
A0A6D2XHJ7|GABRQ_Pan_troglodytes RFLFPLAFGLFNIVYVWVYHMY 632
F7F4H9|GABRQ_Macaca_mulatta      RFLFPLAFGLFNIVYVWVYHMY 632
M3YJY6|GABRQ_Mustela_putorius_furo RILFPLAFVVFNIYVWAYHLY 645
G3V875|GABRQ_Rattus_norvegicus   RFLFPLSFGLFNIVYVWLYHY 635
Q9JLF1|GABRQ_Mus_musculus        RFLFPLSFGLFNIVYVWLYHY 638
F6XR33|GABRQ_Canis_lupus_familiaris RILFPLAFVVFNIYVWAYHLN 710
E1BJH4|GABRQ_Bos_taurus          RLLFPLAFVVFNIYVWVYHY 642
F1Q4Y6|GABRB4_Danio_erio         RIIFPITFGFFNLIYWLYYVN 512
.....710.....720.

```



```

****:::
P24046|GABRR1_Homo_sapiens      IYWSIFS- 479
A0A2R9BL98|GABRR1_Pan_paniscus  IYWSIFS- 479
H2QTE3|GABRR1_Pan_troglodytes   IYWSIFS- 479
F6W0N4|GABRR1_Macaca_mulatta     IYWSIFS- 480
P50572|GABRR1_Rattus_norvegicus  IYWSIFS- 480
P56475|GABRR1_Mus_musculus       IYWSIFS- 480
M3YD49|GABRR1_Mustela_putorius_furo IYWSIFS- 461
XP_038538749.1|GABRR1_Canis_lupus_familiaris IYWSIFS- 480
Q5TZ16|GABRR1_Danio_rerio       IYWSIYSC 466
Q0II76|GABRR1_Bos_taurus         IYWSVFA- 465
.....

```



```

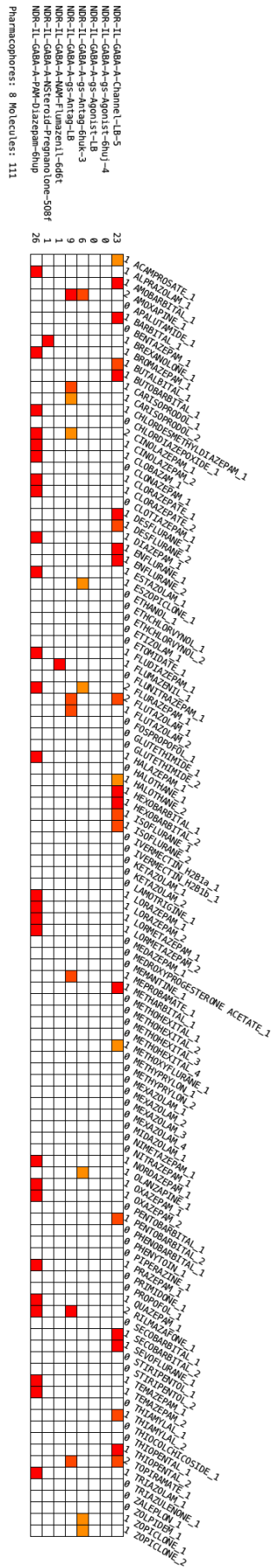
*:.
P28476|GABRR2_Homo_sapiens|VFS|465
P47742|GABRR2_Rattus_norvegicus|VFS|465
P56476|GABRR2_Mus_musculus|VFS|465
A0A2R9AXF6|GABRR2_Pan_paniscus|VFS|461
XP_527448.5|GABRR2_Pan_troglodytes|VFS|490
XP_001095465.3|GABRR2_Macaca_mulatta|VFS|490
M3YCV9|GABRR2_Mustela_putorius_furo|VFS|490
E2R4R0|GABRR2_Canis_lupus_familiaris|VFS|465
F1QX34|GABRR2a_Danio_rerio|VFC|475
Q0II76|GABRR2_Bos_taurus|VFA|465
...

```

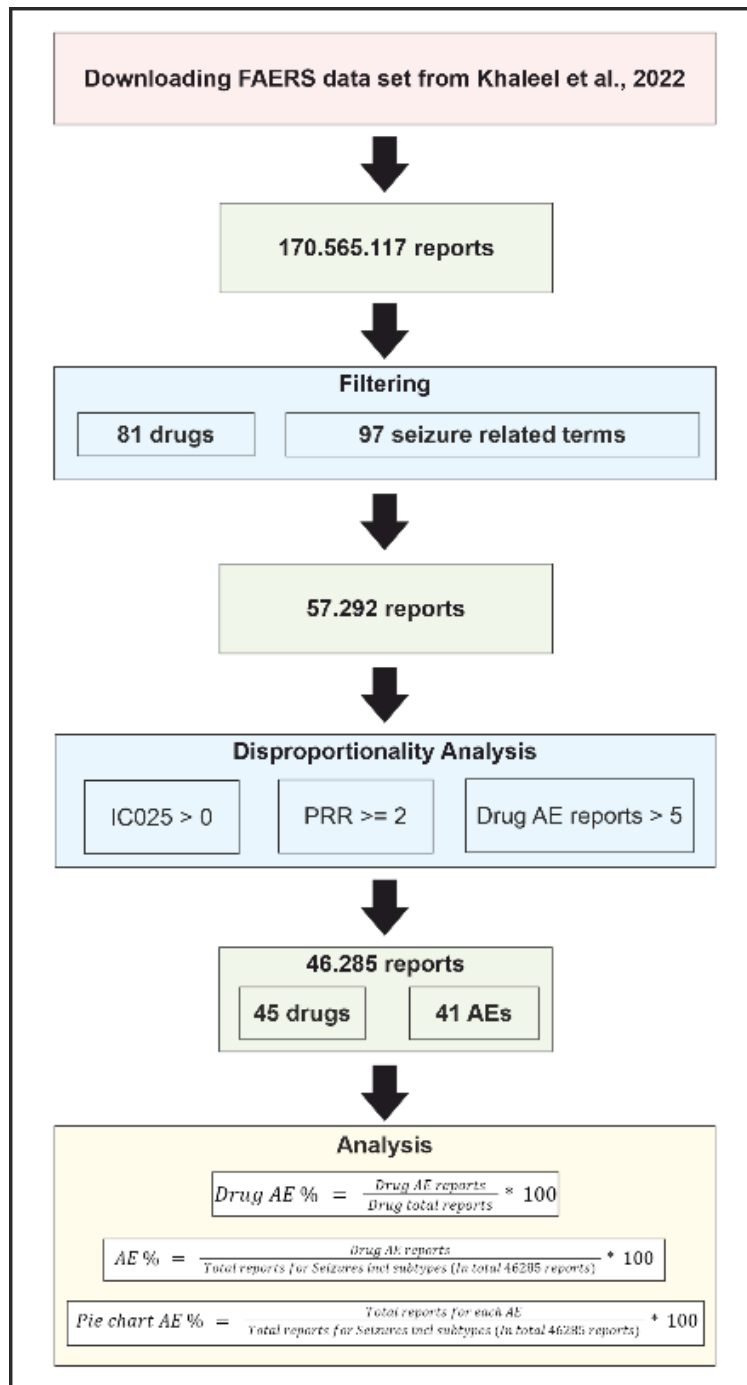

#	Name	SMILES
1	ACAMPROSATE	<chem>S(=O)(=O)(O)CCNC(=O)C</chem>
2	ALPRAZOLAM	<chem>C1c4cc2c(n1c(nnc1C)CN=C2c3ccccc3)cc4</chem>
3	AMOBARBITAL	<chem>O=C1NC(=O)C(C(=O)N1)(CCC(C)C)CC</chem>
4	AMOXAPINE	<chem>C1c4cc2c(Oc3c(N=C2N1CCNCC1)cccc3)cc4</chem>
5	APALUTAMIDE	<chem>S=C3N(c1cnc(c(c1)C(F)(F)F)C#N)C(=O)C4(N3c2cc(F)c(cc2)C(=O)NC)CCC4</chem>
6	BARBITAL	<chem>O=C1NC(=O)C(C(=O)N1)(CC)CC</chem>
7	BENTAZEPAM	<chem>s2c1NC(=O)CN=C(c1c3c2CCCC3)c4ccccc4</chem>
8	BREXANOLONE	<chem>O=C([C@@H]4[C@@]3([C@H]([C@H]2[C@@H]([C@@]1([C@H](C[C@H](O)CC1)CC2)C)CC3)CC4)C)C</chem>
9	BROMAZEPAM	<chem>BrC3cc2c(NC(=O)CN=C2c1ncccc1)cc3</chem>
10	BUTALBITAL	<chem>O=C1NC(=O)C(C(=O)N1)(CC=C)CC(C)C</chem>
11	BUTOBARBITAL	<chem>O=C1NC(=O)C(C(=O)N1)(CCCC)CC</chem>
12	CARISOPRODOL	<chem>O=C(OCC(COC(=O)N)(CCC)C)NC(C)C</chem>
13	CHLORDESMETHYLDIAZEPAM	<chem>C1c1c(cccc1)C3=NCC(=O)Nc2c3cc(C1)cc2</chem>
14	CHLORDIAZEPOXIDE	<chem>C1c3cc1c(N=C(NC)CN(=O)=C1c2cccc2)cc3</chem>
15	CINOLAZEPAM	<chem>C1c3cc2c(N(C(=O)C(O)N=C2c1c(F)cccc1)CCC#N)cc3</chem>
16	CLOBAZAM	<chem>C1c3cc2N(c1ccccc1)C(=O)CC(=O)N(c2cc3)C</chem>
17	CLONAZEPAM	<chem>C1c1c(cccc1)C3=NCC(=O)Nc2c3cc([N+](=O)[O-])cc2</chem>
18	CLORAZEPATE	<chem>C1c3cc1c(NC(=O)C(N=C1c2cccc2)C(=O)O)cc3</chem>
19	CLOTIAZEPAM	<chem>C1c1c(cccc1)C3=NCC(=O)N(c2sc(cc23)CC)C</chem>
20	DESFLURANE	<chem>FC(F)(F)C(F)OC(F)F</chem>
21	DIAZEPAM	<chem>C1c3cc1c(N(C(=O)CN=C1c2cccc2)C)cc3</chem>
22	ENFLURANE	<chem>C1C(F)C(F)(F)OC(F)F</chem>
23	ESTAZOLAM	<chem>C1c4cc2c(n1c(nnc1)CN=C2c3ccccc3)cc4</chem>
24	ESZOPICLONE	<chem>C1c4cnc(N3C(=O)c1nccnc1[C@@H]3OC(=O)N2CCN(CC2)C)cc4</chem>
25	ETHANOL	<chem>CCO</chem>
26	ETHCHLORVYNOL	<chem>C1=C=C(C)C(C#C)CC</chem>
27	ETIZOLAM	<chem>C1c1c(cccc1)C3=NCc4nnc(n4c2sc(cc23)CC)C</chem>
28	ETOMIDATE	<chem>O=C(OCC)c1n(cnc1)[C@@H](c2cccc2)C</chem>
29	FLUDIAZEPAM	<chem>C1c3cc2c(N(C(=O)CN=C2c1c(F)cccc1)C)cc3</chem>
30	FLUMAZENIL	<chem>Fc3cc2c(n1cnc(c1CN(C2=O)C)C(=O)OCC)cc3</chem>
31	FLUNITRAZEPAM	<chem>Fc1c(cccc1)C3=NCC(=O)N(c2c3cc([N+](=O)[O-])cc2)C</chem>
32	FLURAZEPAM	<chem>C1c3cc2c(N(C(=O)CN=C2c1c(F)cccc1)CCN(CC)CC)cc3</chem>
33	FLUTAZOLAM	<chem>C1c4cc3c(N(C(=O)CN1CCOC13c2c(F)cccc2)CCO)cc4</chem>
34	FOSPROPOFOL	<chem>P(=O)(OC)c1c(cccc1C(C)C)C(C)C(O)O</chem>
35	GLUTETHIMIDE	<chem>O=C1NC(=O)CCG1(c2cccc2)CC</chem>
36	HALAZEPAM	<chem>C1c3cc1c(N(C(=O)CN=C1c2cccc2)CC(F)(F)F)cc3</chem>
37	HALOTHANE	<chem>BrC(Cl)C(F)(F)F</chem>
38	HEXOBARBITAL	<chem>O=C1N(C(=O)C(C(=O)N1)(C2=CCCC2)C)C</chem>
39	ISOFLURANE	<chem>C1C(OC(F)F)C(F)(F)F</chem>
40a	IVERMECTIN H2B1a	<chem>O=C6O[C@@H]2C[C@@]1(O[C@@H]([C@H](CC1)C)[C@@H](CC)C)O[C@@H](C2)CC=C([C@@H](O[C@@H]4O[C@H]([C@H](O[C@@H]3O[C@H]([C@H](O)[C@@H](OC)C3)C)[C@@H](OC)C4)C)[C@H](C=CC=C5[C@]7(O)[C@H](OC5)[C@H](O)C(=C[C@@H]67)C)C)C</chem>
40b	IVERMECTIN H2B1b	<chem>O=C6O[C@@H]2C[C@@]1(O[C@@H]([C@H](CC1)C)C(C)C)O[C@@H](C2)CC=C([C@@H](O[C@@H]4O[C@H]([C@H](O[C@@H]3O[C@H]([C@H](O)[C@@H](OC)C3)C)[C@@H](OC)C4)C)[C@H](C=CC=C5[C@]7(O)[C@H](OC5)[C@H](O)C(=C[C@@H]67)C)C)C</chem>
41	KETAZOLAM	<chem>C1c4cc2c(N(C(=O)CN1C(=O)C=C(OC12c3ccccc3)C)C)cc4</chem>
42	LAMOTRIGINE	<chem>C1c1c(Cl)cccc1c2nnc(nc2N)N</chem>
43	LORAZEPAM	<chem>C1c1c(cccc1)C3=NC(O)C(=O)Nc2c3cc(C1)cc2</chem>
44	LORMETAZEPAM	<chem>C1c1c(cccc1)C3=NC(O)C(=O)Nc2c3cc(C1)cc2</chem>
45	MEDAZEPAM	<chem>C1c3cc1c(N(CCN=C1c2cccc2)C)cc3</chem>
46	MEDROXYPROGESTERONE ACETATE	<chem>O=C(O[C@@]4(C(=O)C)[C@@]3([C@H]([C@H]2[C@@H]([C@@]1(C(=CC(=O)CC1)[C@H](C2)C)C)CC3)C4)C</chem>
47	MEMANTINE	<chem>NC12C[C@]3(C[C@@](C1)(CC(C2)C3)C)C</chem>

48	MEPROBAMATE	<chem>O=C(OCC(COC(=O)N)(CCC)C)N</chem>
49	METHARBITAL	<chem>O=C1N(C(=O)C(C(=O)N1)(CC)CC)C</chem>
50	METHOHEXITAL	<chem>O=C1N(C(=O)C(C(=O)N1)(C(C#CCC)C)CC=C)C</chem>
51	METHOXYFLURANE	<chem>ClC(Cl)C(F)(F)OC</chem>
52	METHYPRYLON	<chem>O=C1NCC(C(=O)C1(C)CC)C</chem>
53	MEXAZOLAM	<chem>Clc1c(cccc1)C34OCC(N4CC(O)=Nc2c3cc(Cl)cc2)C</chem>
54	MIDAZOLAM	<chem>Clc4cc3c(n1c(ncc1CN=C3c2c(F)cccc2)C)cc4</chem>
55	NIMETAZEPAM	<chem>O=[N+]([O-])c3cc1c(N(C(=O)CN=C1c2cccc2)C)cc3</chem>
56	NITRAZEPAM	<chem>O=[N+]([O-])c3cc1c(NC(=O)CN=C1c2cccc2)cc3</chem>
57	NORDAZEPAM	<chem>Clc3cc1c(NC(=O)CN=C1c2cccc2)cc3</chem>
58	OLANZAPINE	<chem>s3c2Nc4c(N=C(N1CCN(CC1)C)c2cc3C)cccc4</chem>
59	OXAZEPAM	<chem>Clc3cc1c(NC(=O)C(O)N=C1c2cccc2)cc3</chem>
60	PENTOBARBITAL	<chem>O=C1NC(=O)C(C(=O)N1)(C(CCC)C)CC</chem>
61	PHENOBARBITAL	<chem>O=C2NC(=O)C(c1cccc1)(C(=O)N2)CC</chem>
62	PHENYTOIN	<chem>O=C1NC(=O)C(N1)(c2cccc2)c3cccc3</chem>
63	PIPERAZINE	<chem>N1CCNCC1</chem>
64	PRAZEPAM	<chem>Clc4cc1c(N(C(=O)CN=C1c2cccc2)CC3CC3)cc4</chem>
65	PRIMIDONE	<chem>O=C2NCNC(=O)C2(c1cccc1)CC</chem>
66	PROPOFOL	<chem>Oc1c(cccc1C(C)C)C(C)C</chem>
67	QUAZEPAM	<chem>Clc3cc2c(N(C(=S)CN=C2c1c(F)cccc1)CC(F)(F)F)cc3</chem>
68	RILMAZAFONE	<chem>Clc1c(cccc1)C(=O)c3c(n2nc(nc2CNC(=O)CN)C(=O)N(C)C)ccc(Cl)c3</chem>
69	SECOBARBITAL	<chem>O=C1NC(=O)C(C(=O)N1)(C(CCC)C)CC=C</chem>
70	SEVOFLURANE	<chem>FC(F)(F)C(OCF)C(F)(F)F</chem>
71	STIRIPENTOL	<chem>O1c2c(OC1)ccc(c2)C=C(C)C(C)C</chem>
72	TEMAZEPAM	<chem>Clc3cc1c(N(C(=O)C(O)N=C1c2cccc2)C)cc3</chem>
73	THIAMYLAL	<chem>S=C1NC(=O)C(C(=O)N1)(C(CCC)C)CC=C</chem>
74	THIOLCHICOSIDE	<chem>S(c4c(=O)ccc3c(c2c(OC)c(OC)c(O[C@@H]1O[C@@H]([C@@H](O)[C@H](O)[C@H]1O)CO)cc2CC[C@@H]3NC(=O)C)cc4)C</chem>
75	THIOPENTAL	<chem>S=C1NC(=O)C(C(=O)N1)(C(CCC)C)CC</chem>
76	TOPIRAMATE	<chem>S(=O)(=O)(OC[C@]13OC(O[C@H]1[C@@H]2OC(O[C@@H]2C03)(C)C)(C)C)N</chem>
77	TRIAZOLAM	<chem>Clc1c(cccc1)C4=NCc2nnc(n2c3c4cc(Cl)cc3)C</chem>
78	TRIAZULENONE	<chem>Clc1c(cccc1)C3=NCC4N(c2c3cc(N(=O)=O)cc2)C(=O)/C(/N=4)=C/N5CCN(CC5)C</chem>
79	ZALEPLON	<chem>O=C(N(c3cc(c2n1ncc(c1ncc2)C#N)ccc3)CC)C</chem>
80	ZOLPIDEM	<chem>O=C(N(C)C)Cc1n3c(nc1c2ccc(cc2)C)ccc(c3)C</chem>
81	ZOPICLONE	<chem>Clc4cnc(N3C(=O)c1nccnc1C3OC(=O)N2CCN(CC2)C)cc4</chem>

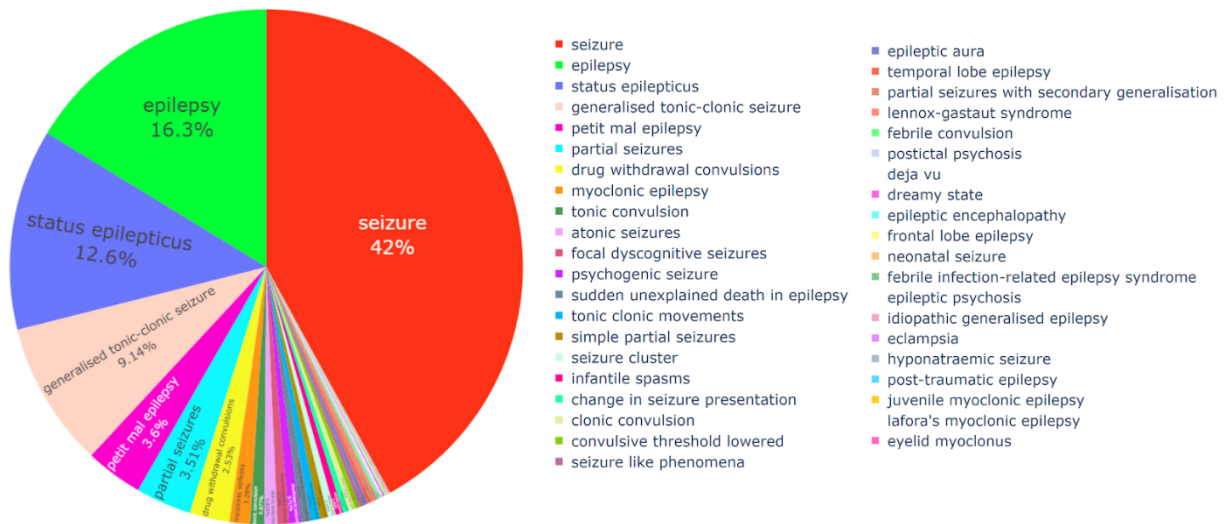
Supplementary Table S3: All drugs selected in this study and their respective SMILES codes.



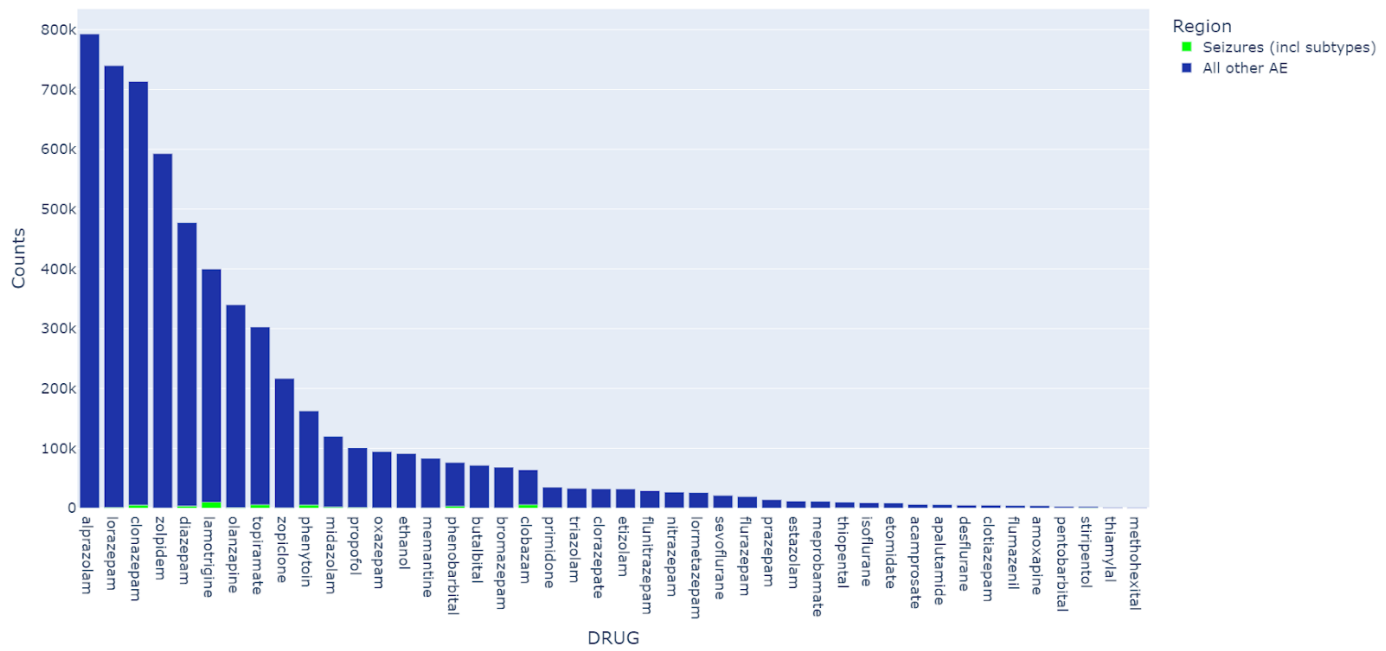
Supplementary Figure S9: Results from *in silico* profiling of 81 Drugs using selected GABA_A models in the NeuroDeRisk IL Profiler V1.0.



Supplementary Figure S10. Workflow of the FAERS analysis. Greenish boxes contain the results of the filtering processes, blue boxes describe the filtering process which was used for the FAERS data set obtained from Khaleel et al., 2022 (Khaleel *et al.*, 2022).



Supplementary Figure S11: Distribution of all seizure related reports from our analysis which are in total 46285 reports.



Supplementary Figure S12: Total report number for all drugs used, which are displayed in Figure 4. All seizure-category reports are displayed in green, all other adverse event terms as a lump sum in blue.

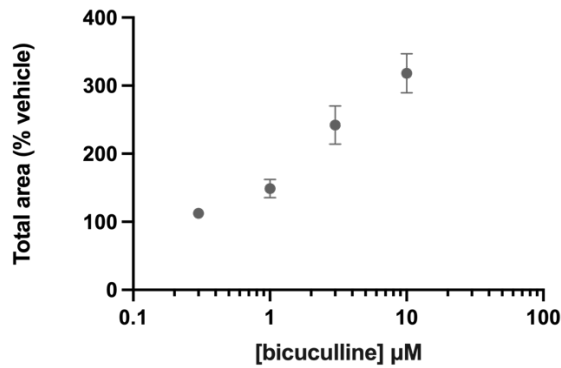
Drug	Total reports	AE	AE reports
ACAMPROSATE	587	SEIZURE	17
ALPRAZOLAM	30031	SEIZURE	410
		EPILEPSY	71
		STATUS EPILEPTICUS	44
		DRUG WITHDRAWAL CONVULSIONS	29
AMOXAPINE	134	SEIZURE	9
BROMAZEPAM	3047	SEIZURE	26
		STATUS EPILEPTICUS	14
		EPILEPSY	13
CARISOPRODOL	3493	SEIZURE	56
CHLORDIAZEPOXIDE	756	SEIZURE	14
CLOBAZAM	2070	SEIZURE	325
		DRUG WITHDRAWAL CONVULSIONS	76
		EPILEPSY	55
		STATUS EPILEPTICUS	51
		PARTIAL SEIZURES	19
		FOCAL DYSCOGNITIVE SEIZURES	12
		PETIT MAL EPILEPSY	11
CLONAZEPAM	18338	SEIZURE	498
		STATUS EPILEPTICUS	66
		EPILEPSY	59
		DRUG WITHDRAWAL CONVULSIONS	29
		PARTIAL SEIZURES	18
		PETIT MAL EPILEPSY	18
CLORAZEPATE DIPOASSIUM	1205	SEIZURE	16
DESFLURANE	509	SEIZURE LIKE PHENOMENA	12
DIAZEPAM	20293	SEIZURE	345
		STATUS EPILEPTICUS	88
		DRUG WITHDRAWAL CONVULSIONS	69
		EPILEPSY	58
		PARTIAL SEIZURES	12
		PETIT MAL EPILEPSY	9
ESTAZOLAM	263	SEIZURE	16

ESZOPICLONE	7811	SEIZURE	22
ETHANOL	13742	SEIZURE	164
		STATUS EPILEPTICUS	14
		EPILEPSY	14
		PARTIAL SEIZURES	12
ETIZOLAM	630	SEIZURE	13
FLUMAZENIL	248	SEIZURE	51
		DRUG WITHDRAWAL CONVULSIONS	42
FLUNITRAZEPAM	875	SEIZURE	28
ISOFLURANE	502	STATUS EPILEPTICUS	33
IVERMECTIN	1764	SEIZURE	21
LAMOTRIGINE	26598	SEIZURE	1723
		EPILEPSY	228
		STATUS EPILEPTICUS	189
		PETIT MAL EPILEPSY	140
		PARTIAL SEIZURES	76
		FOCAL DYSCOGNITIVE SEIZURES	54
		SUDDEN UNEXPLAINED DEATH IN EPILEPSY	41
		MYOCLONIC EPILEPSY	33
LORAZEPAM	16200	SEIZURE	291
		STATUS EPILEPTICUS	79
		EPILEPSY	76
		DRUG WITHDRAWAL CONVULSIONS	27
		PETIT MAL EPILEPSY	10
		PARTIAL SEIZURES	9
LORMETAZEPAM	1347	EPILEPSY	14
		SEIZURE	8
MEDROXYPROGESTERONE ACETATE	10874	SEIZURE	34
		EPILEPSY	12
MEMANTINE	6510	SEIZURE	190
		EPILEPSY	61
		PETIT MAL EPILEPSY	16
		PARTIAL SEIZURES	12
		STATUS EPILEPTICUS	8
MEPROBAMATE	781	SEIZURE	10

MIDAZOLAM	4298	SEIZURE	123
		STATUS EPILEPTICUS	57
		EPILEPSY	21
		SEIZURE LIKE PHENOMENA	15
		FOCAL DYSCOGNITIVE SEIZURES	13
		PETIT MAL EPILEPSY	13
		PARTIAL SEIZURES	12
NITRAZEPAM	627	SEIZURE	13
OLANZAPINE	28785	SEIZURE	554
		EPILEPSY	137
		STATUS EPILEPTICUS	42
		PARTIAL SEIZURES	18
		PETIT MAL EPILEPSY	17
OXAZEPAM	4627	SEIZURE	53
		STATUS EPILEPTICUS	17
		EPILEPSY	14
PHENOBARBITAL	2287	SEIZURE	143
		STATUS EPILEPTICUS	80
		EPILEPSY	35
		PARTIAL SEIZURES	15
		MYOCLONIC EPILEPSY	8
PHENYTOIN	10126	SEIZURE	972
		STATUS EPILEPTICUS	204
		EPILEPSY	100
		PARTIAL SEIZURES	59
		PETIT MAL EPILEPSY	42
		FOCAL DYSCOGNITIVE SEIZURES	23
		SUDDEN UNEXPLAINED DEATH IN EPILEPSY	13
PRIMIDONE	711	SEIZURE	51
		EPILEPSY	17
		PETIT MAL EPILEPSY	14
		MYOCLONIC EPILEPSY	11
PROPOFOL	7869	SEIZURE	165
		STATUS EPILEPTICUS	70
		EPILEPSY	27
		SEIZURE LIKE PHENOMENA	25

		MYOCLONIC EPILEPSY	12
SEVOFLURANE	1650	SEIZURE	23
	1650	SEIZURE LIKE PHENOMENA	11
TEMAZEPAM	3519	SEIZURE	46
THIOPENTAL	530	STATUS EPILEPTICUS	30
	530	SEIZURE	20
TOPIRAMATE	11307	SEIZURE	562
	11307	EPILEPSY	85
	11307	STATUS EPILEPTICUS	82
	11307	PETIT MAL EPILEPSY	59
	11307	FOCAL DYSCOGNITIVE SEIZURES	31
	11307	PARTIAL SEIZURES	30
	11307	DRUG WITHDRAWAL CONVULSIONS	21
	11307	MYOCLONIC EPILEPSY	21
	11307	SUDDEN UNEXPLAINED DEATH IN EPILEPSY	16
	11307	SEIZURE LIKE PHENOMENA	9
TRIAZOLAM	1431	SEIZURE	12
ZOLPIDEM	18040	SEIZURE	248
		DRUG WITHDRAWAL CONVULSIONS	39
		EPILEPSY	38
		STATUS EPILEPTICUS	22
ZOPICLONE	5399	SEIZURE	70
		EPILEPSY	28
		STATUS EPILEPTICUS	12

Supplementary Table S4: Showing all total reports and the reports per AE per drug for the selected drugs and AEs.



Supplementary Figure S13: Mean (\pm SEM) concentration-response data summary of bicuculline (0.3, 1, 3, and 10 μM) effects on CA1 population spike area in rat hippocampal brain slices. Statistical testing was run on raw concentration data (dose: $F(4, 27)=57.10$ $p<.001$; Dunnett's posthoc: bicuculline 1, 3, and 10 μM vs veh, $p<.001$).

BEHAVIORAL ALTERATIONS		
Amoxapine (mM)	Occurrence	%
0	0/8	0%
0.003	0/8	0%
0.01	0/8	0%
0.03	3/8	38%
0.1	8/8	100%
0.3	8/8	100%

MORTALITY		
Amoxapine (mM)	Occurrence	%
0	0/8	0%
0.003	0/8	0%
0.01	0/8	0%
0.03	0/8	0%
0.1	0/8	0%
0.3	2/8	25%

Supplementary Table S5: Behavioral alterations (abnormal swimming behaviour, like circling or erratic movements) and mortality of zebrafish larvae.

	1.58 μM	5 μM	15.8 μM	50 μM
Firing Rate	146	173	145	76
Median Burst Rate	104	127	160	158
Median Num of Spikes in Burst	296	303	183	92
Percent Isolated Spikes	72	14	9	35
ISI CV	135	170	129	92
Normalized IQR Burst Duration	73	27	42	49
Median Burst Duration	145	124	71	57
Mean Interburst Interval	97	79	65	66
Mean of ISI-distance	75	41	36	39
Normalized MAD Burst Spike	59	22	25	38
Median/Mean ISI	101	76	70	89
Median ISI	67	32	37	76

Supplementary Table S6: Heatmap of bicuculline from MEA recordings from rat cortical neurons showing % changes versus vehicle in each parameter. Green color indicates an increase in a parameter, red color indicates a decrease. A value of 100% corresponds to no change from vehicle (pure white color). The intensity of the color in a box increases with the magnitude of the change. Statistically significant values compared to vehicle are indicated in bold.

Subunit	Species	Sequence ID	Database	Date accessed
GABRA1	Homo sapiens	P14867	UniProt	11.04.2022
GABRA1	Pan paniscus	A0A2R9AU65	UniProt	11.04.2022
GABRA1	Mustela putorius furo	M3YP62	UniProt	11.04.2022
GABRA1	Rattus norvegicus	P62813	UniProt	11.04.2022
GABRA1	Mus musculus	P62812	UniProt	11.04.2022
GABRA1	Canis lupus familiaris	E2RSP8	UniProt	11.04.2022
GABRA1	Pan troglodytes	A0A2I3SDV7	UniProt	11.04.2022
GABRA1	Danio rerio	Q08BJ3	UniProt	11.04.2022
GABRA1	Macaca mulatta	A0A1D5Q406	UniProt	11.04.2022
GABRA1	Bos taurus	P08219	UniProt	11.04.2022

GABRA2	Homo sapiens	P47869	UniProt	11.04.2022
GABRA2	Pan paniscus	XP_003816076.1	NCBI Protein	11.04.2022
GABRA2	Mustela putorius furo	M3Y0V9	UniProt	11.04.2022
GABRA2	Rattus norvegicus	P23576	UniProt	11.04.2022
GABRA2	Mus musculus	P26048	UniProt	11.04.2022

GABRA2	Canis lupus familiaris	A0A5F4CYJ7	UniProt	11.04.2022
GABRA2	Pan troglodytes	H2QPE5	UniProt	11.04.2022
GABRA2a	Danio rerio	E7F635	UniProt	11.04.2022
GABRA2	Macaca mulatta	XP_028703913.1	NCBI Protein	11.04.2022
GABRA2	Bos taurus	P10063	UniProt	11.04.2022

GABRA3	Homo sapiens	P34903	UniProt	11.04.2022
GABRA3	Pan paniscus	A0A2R9AHX2	UniProt	11.04.2022
GABRA3	Mustela putorius furo	M3YJX4	UniProt	11.04.2022
GABRA3	Rattus norvegicus	P20236	UniProt	11.04.2022
GABRA3	Mus musculus	P26049	UniProt	11.04.2022
GABRA3	Canis lupus familiaris	E2QVJ7	UniProt	11.04.2022
GABRA3	Pan troglodytes	H2QZ88	UniProt	11.04.2022
GABRA3	Danio rerio	A0A2R8QC15	UniProt	11.04.2022
GABRA3	Macaca mulatta	F7G8R5	UniProt	11.04.2022
GABRA3	Bos taurus	P10064	UniProt	11.04.2022

GABRA4	Homo sapiens	P48169	UniProt	11.04.2022
GABRA4	Pan paniscus	A0A2R9C6M3	UniProt	11.04.2022
GABRA4	Mustela putorius furo	M3Y0X5	UniProt	11.04.2022
GABRA4	Rattus norvegicus	P28471	UniProt	11.04.2022
GABRA4	Mus musculus	Q9D6F4	UniProt	11.04.2022
GABRA4	Canis lupus familiaris	F1P9P9	UniProt	11.04.2022
GABRA4	Pan troglodytes	H2QPE7	UniProt	11.04.2022
GABRA4	Danio rerio	Q568M9	UniProt	11.04.2022
GABRA4	Macaca mulatta	F6YLN4	UniProt	11.04.2022
GABRA4	Bos taurus	P20237	UniProt	11.04.2022

GABRA5	Homo sapiens	P31644	UniProt	11.04.2022
GABRA5	Pan paniscus	A0A2R9BFW8	UniProt	11.04.2022
GABRA5	Mustela putorius furo	M3XNJ0	UniProt	11.04.2022
GABRA5	Rattus norvegicus	P19969	UniProt	11.04.2022
GABRA5	Mus musculus	Q8BHJ7	UniProt	11.04.2022
GABRA5	Canis lupus familiaris	E2RG38	UniProt	11.04.2022

GABRA5	Pan troglodytes	H2Q919	UniProt	11.04.2022
GABRA5	Danio rerio	E9QE70	UniProt	11.04.2022
GABRA5	Macaca mulatta	G7MW76	UniProt	11.04.2022
GABRA5	Bos taurus	Q08E50	UniProt	11.04.2022

GABRA6	Homo sapiens	Q16445	UniProt	11.04.2022
GABRA6	Pan paniscus	A0A2R8ZQ75	UniProt	11.04.2022
GABRA6	Mustela putorius furo	M3YP65	UniProt	11.04.2022
GABRA6	Rattus norvegicus	P30191	UniProt	11.04.2022
GABRA6	Mus musculus	P16305	UniProt	11.04.2022
GABRA6	Canis lupus familiaris	E2RSN3	UniProt	11.04.2022
GABRA6	Pan troglodytes	H2QRY3	UniProt	11.04.2022
GABRA6b	Danio rerio	F1QGW0	UniProt	11.04.2022
GABRA6	Macaca mulatta	A0A1D5RL15	UniProt	11.04.2022
GABRA6	Bos taurus	E1BE96	UniProt	11.04.2022

GABRB1	Homo sapiens	P18505	UniProt	11.04.2022
--------	--------------	--------	---------	------------

GABRB1	Pan paniscus	A0A2R9C4H8	UniProt	11.04.2022
GABRB1	Mustela putorius furo	M3Y0Y5	UniProt	11.04.2022
GABRB1	Rattus norvegicus	P15431	UniProt	11.04.2022
GABRB1	Mus musculus	P50571	UniProt	11.04.2022
GABRB1	Canis lupus familiaris	F1PEG2	UniProt	11.04.2022
GABRB1	Pan troglodytes	H2QPE8	UniProt	11.04.2022
GABRB1	Danio rerio	F1QPW7	UniProt	11.04.2022
GABRB1	Macaca mulatta	G7MSU9	UniProt	11.04.2022
GABRB1	Bos taurus	P08220	UniProt	11.04.2022

GABRB2	Homo sapiens	P47870	UniProt	11.04.2022
GABRB2	Pan paniscus	A0A2R9C8C8	UniProt	11.04.2022
GABRB2	Mustela putorius furo	M3YP67	UniProt	11.04.2022
GABRB2	Rattus norvegicus	P63138	UniProt	11.04.2022
GABRB2	Mus musculus	P63137	UniProt	11.04.2022
GABRB2	Canis lupus familiaris	A0A5F4CKV8	UniProt	11.04.2022
GABRB2	Pan troglodytes	A0A2J8NKG3	UniProt	11.04.2022

GABRB2	Danio rerio	Q9DDD9	UniProt	11.04.2022
GABRB2	Macaca mulatta	D1LYT2	UniProt	11.04.2022
GABRB2	Bos taurus	P0C2W5	UniProt	11.04.2022

GABRB3	Homo sapiens	P28472	UniProt	11.04.2022
GABRB3	Pan paniscus	A0A2R9BWE5	UniProt	11.04.2022
GABRB3	Mustela putorius furo	M3XNI6	UniProt	11.04.2022
GABRB3	Rattus norvegicus	P63079	UniProt	11.04.2022
GABRB3	Mus musculus	P63080	UniProt	11.04.2022
GABRB3	Canis lupus familiaris	J9P3X1	UniProt	11.04.2022
GABRB3	Pan troglodytes	A0A2I3THQ1	UniProt	11.04.2022
GABRB3	Danio rerio	A0A0R4ILP2	UniProt	11.04.2022
GABRB3	Macaca mulatta	F6ZKJ4	UniProt	11.04.2022
GABRB3	Bos taurus	A5D7U6	UniProt	11.04.2022

GABRD	Homo sapiens	O14764	UniProt	11.04.2022
GABRD	Pan paniscus	A0A2R9B726	UniProt	11.04.2022

GABRD	<i>Mustela putorius furo</i>	XP_004768807.1	NCBI Protein	11.04.2022
GABRD	<i>Rattus norvegicus</i>	P18506	UniProt	11.04.2022
GABRD	<i>Mus musculus</i>	P22933	UniProt	11.04.2022
GABRD	<i>Canis lupus familiaris</i>	E2R3M6	UniProt	11.04.2022
GABRD	<i>Pan troglodytes</i>	A0A2J8K8J4	UniProt	11.04.2022
GABRD	<i>Danio rerio</i>	E9QHL0	UniProt	11.04.2022
GABRD	<i>Macaca mulatta</i>	F6QDC4	UniProt	11.04.2022
GABRD	<i>Bos taurus</i>	A0A3Q1LQH4	UniProt	11.04.2022

GABRE	<i>Homo sapiens</i>	P78334	UniProt	11.04.2022
GABRE	<i>Pan paniscus</i>	A0A2R8ZSJ9	UniProt	11.04.2022
GABRE	<i>Mustela putorius furo</i>	M3YJW6	UniProt	11.04.2022
GABRE	<i>Rattus norvegicus</i>	Q9ES14	UniProt	11.04.2022
GABRE	<i>Mus musculus</i>	Q9JLE8	UniProt	11.04.2022
GABRE	<i>Canis lupus familiaris</i>	E2QVM5	UniProt	11.04.2022
GABRE	<i>Pan troglodytes</i>	H2QZ86	UniProt	11.04.2022
-	<i>Danio rerio</i>	-	-	-

GABRE	Macaca mulatta	F7GJ80	UniProt	11.04.2022
GABRE	Bos taurus	G3MWU9	UniProt	11.04.2022

GABRG1	Homo sapiens	Q8N1C3	UniProt	11.04.2022
GABRG1	Pan paniscus	A0A2R9A1L5	UniProt	11.04.2022
GABRG1	Mustela putorius furo	M3Y0V1	UniProt	11.04.2022
GABRG1	Rattus norvegicus	P23574	UniProt	11.04.2022
GABRG1	Mus musculus	Q9R0Y8	UniProt	11.04.2022
GABRG1	Canis lupus familiaris	E2RH22	UniProt	11.04.2022
GABRG1	Pan troglodytes	H2QPE4	UniProt	11.04.2022
GABRG1	Danio rerio	A0A0R4IPF9	UniProt	11.04.2022
GABRG1	Macaca mulatta	A0A5F8A0N7	UniProt	11.04.2022
GABRG1	Bos taurus	F6Q4V7	UniProt	11.04.2022

GABRG2	Homo sapiens	P18507-2	UniProt	11.04.2022
GABRG2	Pan paniscus	A0A2R9CM76	UniProt	11.04.2022
GABRG2	Mustela putorius furo	XP_004737727.1	NCBI Protein	11.04.2022

GABRG2	Rattus norvegicus	NP_001380704.1	NCBI Protein	11.04.2022
GABRG2	Mus musculus	P22723	UniProt	11.04.2022
GABRG2	Canis lupus familiaris	E2RSQ1	UniProt	11.04.2022
GABRG2	Pan troglodytes	A0A2I3RPH6	UniProt	11.04.2022
GABRG2	Danio rerio	F1RDP2	UniProt	11.04.2022
GABRG2	Macaca mulatta	F7A3C2	UniProt	11.04.2022
GABRG2	Bos taurus	P22300	UniProt	11.04.2022

GABRG3	Homo sapiens	Q99928	UniProt	11.04.2022
GABRG3	Pan paniscus	A0A2R9BD98	UniProt	11.04.2022
GABRG3	Mustela putorius furo	XP_044926358.1	NCBI Protein	11.04.2022
GABRG3	Rattus norvegicus	P28473	UniProt	11.04.2022
GABRG3	Mus musculus	P27681	UniProt	11.04.2022
GABRG3	Canis lupus familiaris	F1PHI6	UniProt	11.04.2022
GABRG3	Pan troglodytes	A0A2I3TTK9	UniProt	11.04.2022
GABRG3	Danio rerio	XP_009300843.1	NCBI Protein	11.04.2022

GABRG3	Macaca mulatta	F7HI54	UniProt	11.04.2022
GABRG3	Bos taurus	XP_024838027.1	NCBI Protein	11.04.2022

GABRP	Homo sapiens	O00591	UniProt	11.04.2022
GABRP	Pan paniscus	A0A2R8ZJ77	UniProt	11.04.2022
GABRP	Mustela putorius furo	M3YN80	UniProt	11.04.2022
GABRP	Rattus norvegicus	O09028	UniProt	11.04.2022
GABRP	Mus musculus	Q8QZW7	UniProt	11.04.2022
GABRP	Canis lupus familiaris	E2RS87	UniProt	11.04.2022
GABRP	Pan troglodytes	A0A2J8LXV6	UniProt	11.04.2022
GABRP	Danio rerio	XP_021330000.1	NCBI Protein	11.04.2022
GABRP	Macaca mulatta	A0A1D5QJZ6	UniProt	11.04.2022
GABRP	Bos taurus	Q5EA06	UniProt	11.04.2022

GABRQ	Homo sapiens	Q9UN88	UniProt	11.04.2022
GABRQ	Pan paniscus	A0A2R9ALH2	UniProt	11.04.2022
GABRQ	Mustela putorius furo	M3YJY6	UniProt	11.04.2022

GABRQ	Rattus norvegicus	G3V875	UniProt	11.04.2022
GABRQ	Mus musculus	Q9JLF1	UniProt	11.04.2022
GABRQ	Canis lupus familiaris	F6XRX3	UniProt	11.04.2022
GABRQ	Pan troglodytes	A0A6D2XHJ7	UniProt	11.04.2022
GABRB4	Danio rerio	F1Q4Y6	UniProt	11.04.2022
GABRQ	Macaca mulatta	F7F4H9	UniProt	11.04.2022
GABRQ	Bos taurus	E1BJH4	UniProt	11.04.2022

GABRR1	Homo sapiens	P24046	UniProt	11.04.2022
GABRR1	Pan paniscus	A0A2R9BL98	UniProt	11.04.2022
GABRR1	Mustela putorius furo	M3YD49	UniProt	11.04.2022
GABRR1	Rattus norvegicus	P50572	UniProt	11.04.2022
GABRR1	Mus musculus	P56475	UniProt	11.04.2022
GABRR1	Canis lupus familiaris	XP_038538749.1	NCBI Protein	11.04.2022
GABRR1	Pan troglodytes	H2QTE3	UniProt	11.04.2022
GABRR1	Danio rerio	Q5TZ16	UniProt	11.04.2022

GABRR1	Macaca mulatta	F6W0N4	UniProt	11.04.2022
GABRR1	Bos taurus	Q0II76	UniProt	11.04.2022

GABRR2	Homo sapiens	P28476	UniProt	11.04.2022
GABRR2	Pan paniscus	A0A2R9AXF6	UniProt	11.04.2022
GABRR2	Mustela putorius furo	M3YCV9	UniProt	11.04.2022
GABRR2	Rattus norvegicus	P47742	UniProt	11.04.2022
GABRR2	Mus musculus	P56476	UniProt	11.04.2022
GABRR2	Canis lupus familiaris	E2R4R0	UniProt	11.04.2022
GABRR2	Pan troglodytes	XP_527448.5	NCBI Protein	11.04.2022
GABRR2a	Danio rerio	F1QX34	UniProt	11.04.2022
GABRR2	Macaca mulatta	XP_001095465.3	NCBI Protein	11.04.2022
GABRR2	Bos taurus	Q0II76	UniProt	11.04.2022

GABRR3	Homo sapiens	A8MPY1	UniProt	11.04.2022
GABRR3	Pan paniscus	A0A2R9BJ01	UniProt	11.04.2022
GABRR3	Mustela putorius furo	M3XTX4	UniProt	11.04.2022

GABRR3	Rattus norvegicus	P50573	UniProt	11.04.2022
GABRR3	Mus musculus	B2RXA8	UniProt	11.04.2022
GABRR3	Canis lupus familiaris	-	-	-
GABRR3	Pan troglodytes	A0A2J8MY57	UniProt	11.04.2022
GABRR3a	Danio rerio	B3DIE5	UniProt	11.04.2022
GABRR3	Macaca mulatta	F6YLK3	UniProt	11.04.2022
GABRR3	Bos taurus	E1B988	UniProt	11.04.2022

Supplementary Table S7: All sources (subunit, sequence ID, database) of protein sequences used for the alignments of all species in different coloured groups (all alpha subunits, all beta subunits, etc).

References

- Bocquet N, Nury H, Baaden M, Le Poupon C, Changeux J-P, Delarue M, *et al.* (2009). X-ray structure of a pentameric ligand-gated ion channel in an apparently open conformation. *Nature* **457**(7225): 111-114.
- Chen Q, Wells MM, Arjunan P, Tillman TS, Cohen AE, Xu Y, *et al.* (2018). Structural basis of neurosteroid anesthetic action on GABAA receptors. *Nature communications* **9**(1): 3972.
- Fourati Z, Howard RJ, Heusser SA, Hu H, Ruza RR, Sauguet L, *et al.* (2018). Structural Basis for a Bimodal Allosteric Mechanism of General Anesthetic Modulation in Pentameric Ligand-Gated Ion Channels. *Cell Reports* **23**(4): 993-1004.
- Hénault CM, Govaerts C, Spurny R, Brams M, Estrada-Mondragon A, Lynch J, *et al.* (2019). A lipid site shapes the agonist response of a pentameric ligand-gated ion channel. *Nature chemical biology* **15**(12): 1156-1164.
- Huang X, Chen H, Shaffer PL (2017). Crystal Structures of Human GlyR α 3 Bound to Ivermectin. *Structure (London, England : 1993)* **25**(6): 945-950.e942.
- Kasaragod VB, Mortensen M, Hardwick SW, Wahid AA, Dorovykh V, Chirgadze DY, *et al.* (2022). Mechanisms of inhibition and activation of extrasynaptic $\alpha\beta$ GABAA receptors. *Nature* **602**(7897): 529-533.
- Khaleel MA, Khan AH, Ghadzi SM, Adnan AS, Abdallah QM (2022). A Standardized Dataset of a Spontaneous Adverse Event Reporting System. In: *Healthcare* Vol. 10.
- Kim JJ, Gharpure A, Teng J, Zhuang Y, Howard RJ, Zhu S, *et al.* (2020). Shared structural mechanisms of general anaesthetics and benzodiazepines. *Nature* **585**(7824): 303-308.
- Lavery D, Thomas P, Field M, Andersen OJ, Gold MG, Biggin PC, *et al.* (2017). Crystal structures of a GABAA-receptor chimera reveal new endogenous neurosteroid-binding sites. *Nature structural & molecular biology*.
- Liu S, Xu L, Guan F, Liu Y-T, Cui Y, Zhang Q, *et al.* (2018). Cryo-EM structure of the human $\alpha 5\beta 3$ GABAA receptor. *Cell Research* **28**(9): 958-961.
- Masiulis S, Desai R, Uchański T, Serna Martin I, Lavery D, Karia D, *et al.* (2019). GABAA receptor signalling mechanisms revealed by structural pharmacology. *Nature*.
- Miller PS, Aricescu AR (2014). Crystal structure of a human GABAA receptor. *Nature* **512**(7514): 270-275.
- Miller PS, Scott S, Masiulis S, De Colibus L, Pardon E (2017). Structural basis for GABAA receptor potentiation by neurosteroids. **24**(11): 986-992.
- Nury H, Van Renterghem C, Weng Y, Tran A, Baaden M, Dufresne V, *et al.* (2011). X-ray structures of general anaesthetics bound to a pentameric ligand-gated ion channel. *Nature* **469**(7330): 428-431.
- Nys M, Wijckmans E, Farinha A, Yoluk O, Andersson M, Brams M, *et al.* (2016). Allosteric binding site in a Cys-loop receptor ligand-binding domain unveiled in the crystal structure of ELIC in complex with chlorpromazine. *Proceedings of the National Academy of Sciences of the United States of America* **113**(43): E6696-e6703.

Pan J, Chen Q, Willenbring D, Mowrey D, Kong X-P, Cohen A, *et al.* (2012). Structure of the Pentameric Ligand-Gated Ion Channel GLIC Bound with Anesthetic Ketamine. *Structure (London, England : 1993)* **20**(9): 1463-1469.

Phulera S, Zhu H (2018). Cryo-EM structure of the benzodiazepine-sensitive alpha1beta1gamma2S tri-heteromeric GABAA receptor in complex with GABA. **7**.

Puthenkalam R, Hieckel M, Simeone X, Suwattanasophon C, Feldbauer RV, Ecker GF, *et al.* (2016). Structural Studies of GABA-A receptor binding sites: Which experimental structure tells us what? *Frontiers in Molecular Neuroscience* **9**.

Sauguet L, Howard RJ, Malherbe L, Lee US, Corringier P-J, Adron Harris R, *et al.* (2013). Structural basis for potentiation by alcohols and anaesthetics in a ligand-gated ion channel. *Nature communications* **4**(1): 1697.

Sente A, Desai R, Naydenova K, Malinauskas T, Jounaidi Y, Miehling J, *et al.* (2022). Differential assembly diversifies GABAA receptor structures and signalling. *Nature* **604**(7904): 190-194.

Spurny R, Billen B, Howard RJ, Brams M, Debaveye S, Price KL, *et al.* (2013). Multisite Binding of a General Anesthetic to the Prokaryotic Pentameric *Erwinia chrysanthemi* Ligand-gated Ion Channel (ELIC) *. *Journal of Biological Chemistry* **288**(12): 8355-8364.

Spurny R, Debaveye S, Farinha A, Veys K, Vos AM, Gossas T, *et al.* (2015). Molecular blueprint of allosteric binding sites in a homologue of the agonist-binding domain of the $\alpha 7$ nicotinic acetylcholine receptor. *Proceedings of the National Academy of Sciences* **112**(19): E2543-E2552.

Uchański T, Masiulis S, Fischer B, Kalichuk V, López-Sánchez U, Zarkadas E, *et al.* (2021). Megabodies expand the nanobody toolkit for protein structure determination by single-particle cryo-EM. *Nature Methods* **18**(1): 60-68.

Ulens C, Spurny R, Thompson Andrew J, Alqazzaz M, Debaveye S, Han L, *et al.* (2014). The Prokaryote Ligand-Gated Ion Channel ELIC Captured in a Pore Blocker-Bound Conformation by the Alzheimer's Disease Drug Memantine. *Structure (London, England : 1993)* **22**(10): 1399-1407.

Zhu S, Noviello CM, Teng J, Walsh RM, Kim JJ, Hibbs RE (2018). Structure of a human synaptic GABAA receptor. *Nature* **559**(7712): 67-72.

Zhu S, Sridhar A, Teng J, Howard RJ, Lindahl E, Hibbs RE (2022). Structural and dynamic mechanisms of GABAA receptor modulators with opposing activities. *Nature communications* **13**(1): 4582.

Zimmermann I, Marabelli A, Bertozzi C, Sivilotti LG, Dutzler R (2012). Inhibition of the Prokaryotic Pentameric Ligand-Gated Ion Channel ELIC by Divalent Cations. *PLOS Biology* **10**(11): e1001429.