

**Supplementary table 1.** Bitter receptors and their ligands with their half maximal effective conc. (EC50) values

Agonists											hTAS2R (mM)										Ref.	
Receptors	1	3	4	5	7	8	9	10	13	14	16	38	39	40	43	44	46	47	49	50		
Absinthin							0.1		0.1								0.00 1	0.000 1			Cowart et al., 1994; Meyerhof et al., 2010; Talmon et al., 2019	
Adhumulone	0.0001												0.000 03									Intelmann et al., 2009
Aesculin										4											Bufe et al., 2002	
Acesulfame K															4. 7	0. 34						Meyerhof et al., 2010
Acetaminophen													3									Rodgers et al., 2006;Dotson, et al,2008;Meyerhof et al., 2010
Acetylgenistin												0.125										Roland et al., 2013
Acetylthiourea												0.00 3										Meyerhof et al., 2010
Adlupulone	0.001								0.003													Intelmann et al., 2009
Aloin															0. 00 03	0. 03						Meyerhof et al., 2010
Allylisothiocyanate											0.01											Meyerhof et al., 2010
Amarogentin	0.03		0.3									0.3			0. 03		0.01	0.003		0.1		Glendinning, 1994;Meyer

																					hof et al., 2010
Amygdalin, D									3.2												Meyerhof et al., 2010
Andrographolide																0.003	0.03		0.01		Meyerhof et al., 2010
Apigenin							0.008			0.001											Roland et al., 2011
Arborescin	0.1		0.03			0.1	0.1						0.1		0.003						Meyerhof et al., 2010
Arbutin									0.7												Meyerhof et al., 2010; Sakurai et al., 210; Bufe et al., 2002
Arglabin						0.1	0.1						0.003		0.003						Meyerhof et al., 2010
Aristolochic acid													1.1	0.0002							Meyerhof et al., 2010
Artemorin			0.1			0.003	0.003								0.01	0.03				Meyerhof et al., 2010	
Azathioprine			0.3			0.3				1					0.3					Meyerhof et al., 2010	
Benzamide							0.3													Meyerhof et al., 2010	
Benzoin						0.03	0.01													Meyerhof et al., 2010	
Biochanin Ag							0.063			0.5										Roland et al., 2013	
Brucine						0.1									0.01					Meyerhof et al., 2010; Mattes, 1994	
Butein							0.016			0.125										Roland et al., 2013	

Caffeine				0.3		0.3	0.3				0. 3		0.3			Burdock, 2005; Rodgers et al., 2006; Intelmann et al., 2009; Guinard et al., 1994
Chrysin							0.063		0.016							Roland et al., 2011
D-camphor		0.3			0.3	0.003							0.3			Meyerhof et al., 2010; Burdock., 2005
Caprolactam								10								Meyerhof et al., 2010
Carisoprodol						0.1						0.01				Meyerhof et al., 2010
Cascarillin	0.1				0.1	0.1					0.01	0.1				Meyerhof et al., 2010
Chalcone						0.032										Roland et al., 2011
Chlorampheni col	0.1			0.0 3	0.1				1		0. 1	0.01				Meyerhof et al., 2010
Chlorhexidine							0.000 1									Meyerhof et al., 2010
Chlorophenira mine		0.03	0.01		0.01	0.1		0.1	0.1	0.1		0.1				Meyerhof et al., 2010
Chloroquine	0. 01				10	0.01			0.1							Meyerhof et al., 2010
Clonixin							0.002									Levit et al., 2014
Cnicin												0.00 3				Meyerhof et al., 2010
Colchicine		0.1							3			0.3				Meyerhof et al., 2010
Colupulone	0.0001									0.000 03						Intelmann et al., 2009

Coumarin						0.3	0.3											Burdock, 2005; Meyerhof et al., 2010
Coumestrol							0.25			0.25								Roland et al., 2011
Crispolide													0.01					Meyerhof et al., 2010
Cromolyn				3								3						Meyerhof et al., 2010
Cucurbitacin B						0.0000 1	0.1											
Cucurbitacin E						0.0000 1											Meyerhof et al., 2010	
Cycloheximid e						0.1											Meyerhof et al., 2010	
Cyanidine chloride							0.25			0.032							Roland et al., 2013	
Dapsone		0.1				0.1					0.03						Meyerhof et al., 2010	
Datiscetinb							0.002			0.016							Roland et al., 2013	
Denatonium benzoate		0.3		1		0.003	0. 03			0.1		0. 3	0.03	0.000 03			Meyerhof et al., 2010	
Dextromethor phan	0.01					0.01											Meyerhof et al., 2010	
Diclofenac							0.025										Levit et al., 2014; Schiffman et al., 2000	
5,4'- dihydroxyflav one							0.25			0.5							Roland et al., 2013	
5,7'- dimethoxyflav onee							0.016			0.032							Roland et al., 2013	
Dimethyl- thioformamide									0.01								Meyerhof et al., 2010	

Diphenhydramine								0.03				0.03							Meyerhof et al., 2010
Diphenidol	0.1		0.1		0.01			0.03	0.03	0.01	0.1	0.1	0.03	0.03	0.003	0.003	0.1	0.1	Meyerhof et al., 2010
Diphenylthiourea								0.0029			0.003								Meyerhof et al., 2010; Dotson et al., 2008
3,5-Diiodosalicylic Acid								0.0005											Levit et al., 2014
Divinylsulfoxide								3											Meyerhof et al., 2010
Dulcoside A			0.2					0.05											Hellfritsch et al., 2012
(-)-Epicatechin, EC			2	1								1							Drewnowski & Gomez-Carneros,2000
Epigallocatechin gallate, egcg												0.01		0.01					Drewnowski & Gomez-Carneros,2000
(+/-) Equol								0.008			0.032								Roland et al., 2011
Eriodictyol								0.032			0.016								Roland et al., 2013
Erythromycin							0.3												Dotson, et al, 2008;Meyerhof et al., 2010
Ethylpyrazine											0.3								Meyerhof et al., 2010; Dotson et al., 2008
N-ethyltiourea											0.03								Meyerhof et al., 2010



																				Upadhyaya et al., 2010
Haloperidol						0.03		0.03												Meyerhof et al., 2010
Herbacetin							0.125			0.125									Roland et al., 2013	
Herbolide D																0.01			Brockhoff et al., 2007	
Helicin								0.4					1						Meyerhof et al., 2010; Bufe et al., 2002	
Hesperitin							0.016			0.008									Roland et al., 2013	
Hg-12				0.25			0.25												Le Neve et al., 2010	
Homoeriodictyol							0.032			0.032									Roland et al., 2013	
Humulon	0.0001										0.0001								Intelmann et al., 2009	
Hydrocortisone																0.003			Meyerhof et al., 2010	
4-hydroxyanisol							0.3												Meyerhof et al., 2010	
5-Hydroxyflavone										0.5									Roland et al., 2013	
Cis-isoadhumulone	0.0003						0.001												Intelmann et al., 2009	
Isoflavone							0.25												Roland et al., 2013	
Isorhamnetin							0.125												Roland et al., 2013	
Isoxanthohumol	0.003						0.003			0.01									Intelmann et al., 2009	

Cis-isocohumulone	0.001							0.001															Intelmann et al., 2009
Cis-isohumulone	0.0003							0.0003															Intelmann et al., 2009
Kaempferol								0.008			0.014												Roland et al., 2013; Levit et al., 2014
Limonin										0.1													Meyerhof et al., 2010; Drewnowski, & Gomez-Carneros, 2000; Guinard et al., 1994
Liquiritigenin								0.032			0.016												Roland et al., 2013
Leu-trp	3		3								3												Kohl et al., 2013
Leu-leu-leu			3																				Kohl et al., 2013
Liquiritigenin								0.032			0.016												Roland et al., 2013
Lupulon	0.0001							0.003															Intelmann et al., 2009
Luteolin								0.002															Roland et al., 2013
Malathion								0.05															Levit et al., 2014
Mefenamic acid								0.003															Levit et al., 2014; Ayenew et al., 2009; Alshehri et al., 2015
Methimazole										0.03													Meyerhof et al., 2010

4(6)-methyl-2-thiouracil									0.03									Meyerhof et al., 2010
Methyl beta-D-glucoside								15										Bufe et al., 2002
Methylthiourea									0.1									Dotson et al., 2008; Meyerhof et al., 2010
Miconazole							0.033											Levit et al., 2014
Morin							0.008			0.002								Roland et al., 2013
Myricetin							0.25			0.001								Roland et al., 2013
1-Naphthoic acid							0.003											Behrens et al., 2004
2-Naphthyl beta-D-glucopyranoside								0.4										Bufe et al., 2002
2-nitro phenyl beta-D-glucopyranoside								1.5										Bufe et al., 2002
6-Nitrosaccharin									0.1									Hamor, 1961
Noscapine							0.01											Meyerhof et al., 2010
Ofloxacin						0.2												Dotson et al., 2008
Orphenadrine														0.03				Meyerhof et al., 2010
Pantoprazole							0.1											Levit et al., 2014
Papaverine					0.01		0.01	0.01										Meyerhof et al., 2010; Guinard et al., 1994

Pemirolast								0.005											Levit et al., 2014
Parthenolide	0.1		0.03			0.1		0.03		0.003					0.1	0.001			Meyerhof et al., 2010
Pelargonidin chloride									0.063			0.032							Roland et al., 2013
Pentagalloylgucose (PGG)				0.003								0.003							Soares et al., 2013
Phloretin									0.016			0.008							Roland et al., 2013
Picrotin								0.03											Behrens et al., 2004
Picrotoxinin	1						1		0.003						0.01	1			Meyerhof et al., 2010
Pinocembrin									0.008			0.004							Roland et al., 2013
Piperonylic acid								0.1											Behrens et al., 2004
1,10-phenanthroline			0.1																Meyerhof et al., 2010
Phenyl beta-D-glucopyranoside										0.38									Sakurai et al., 2010; Bufe et al., 2002
Phe-leu	7.2 (EC50)																		Upadhyaya et al., 2010
L-phenylalanine	53.3																		Kohl et al., 2013; Burdock, 2005
Phe-trp	1		1																Kohl et al., 2013
Phe-phe-phe	0.37 (EC50)																		Upadhyaya et al., 2010
phenylethyl isothiocyanate										0.03									Meyerhof et al., 2010
Phenylthiocarbamide (PTC)										0.0004									Dotson et al., 2008; Meyerhof et al., 2010



Rebaudioside A		0.2					0.6												Hellfritsch et al., 2012
Rebaudioside B		0.2					1												Hellfritsch et al., 2012
Rebaudioside C		0.4					0.4												Hellfritsch et al., 2012
Rubusoside		0.05																	Hellfritsch et al., 2012
Scutellarein							0.008			0.008								Roland et al., 2013	
(−)- $\alpha$ -Santonin						0.1	0.1							0.1				Lossow et al., 2016	
D-Salicin								0.09										Rodgers et al., 2006; Dotson et al., 2008; Intelmann et al., 2009; Bufe et al., 2002	
Salsalate							0.1											Levit et al., 2014	
Silibinin							0.008			0.008								Roland et al., 2013	
Sinigrin								0.1	0.1									Meyerhof et al., 2010	
Sintenin														0.00 03				Brockhoff et al., 2007	
Sodium benzoate							0.3	3										Meyerhof et al., 2010	
Sodium cyclamate	30									30								Meyerhof et al., 2010	
sodium thiocyanate	3									1								Meyerhof et al., 2010	
Stevioside		0.2																Hellfritsch et al., 2012	
Steviolbioside		0.4																Hellfritsch et al., 201	

Strychnine						0.003							0.00 01				Meyerhof et al., 2010
Sucrose Octaacetate													0.3				Burdock, 2005; Meyerhof et al., 2010
Sulfuretin							0.016			0.016						Roland et al., 2013	
Tatridin A													0.03				Brockhoff et al., 2007
Tatridin B													0.1				Brockhoff et al., 2007; Meyerhof et al., 2010
(+)- Taxifolin							0.063			0.125						Roland et al., 2013; Intelmann et al., 2009	
Teuflavin													0.03				Brockhoff et al., 2007
Thiamine	1									1							Meyerhof et al., 2010
Theobromine							1										Burdock, 2005; Guinard et al., 1994
Trans-isoadhumulone	0.0003							0.001									Intelmann et al., 2009
Trans-isocohumulone	0.001							0.001									Intelmann et al., 2009
Trans- isohumulone	0.0003							0.001									Intelmann et al., 2009
L-tryptophan			10														Kohl et al., 2013; Sonntag et al., 2010

Trp-leu		3																Kohl et al., 2013
Trp-phe		0.3																Kohl et al., 2013
Trp-pro		3																Kohl et al., 2013
Trp-trp-trp	0.1	0.01					0.1			0.1			0.1					Kohl et al., 2013
Trp-trp	0.3	1								1								Kohl et al., 2013
Thujone, (-)- $\alpha$ -						0.1	0.003											Meyerhof et al., 2010
Tricetin										0.25								Roland et al., 2013
Umbelliferones							0.6											Rodgers et al., 2006
Vulgarolide													0.1					Brockhoff et al., 2007
Xanthohumol	0.001						0.003			0.003								Intelmann et al., 2009
Xanthone							0.25			0.5								Roland et al., 2013
Xanthotoxin						0.1	0.1						0.1					Mancuso et al., 2015
Yohimbine	0.3	0.3				0.3			0.3				0.3					Meyerhof et al., 2010