Interactions between Anandamide & Corticotropin-Releasing Hormone Signaling Modulate Human Amygdala Function & Risk for Anxiety Disorders: An Imaging Genetics Strategy for Modeling Molecular Interactions

Supplemental Information

Table S1. DSM-IV diagnosis.

	n
Bipolar	11
Generalized Anxiety	12
Panic	6
Agoraphobia	10
OCD	6
Social Anxiety	6
Alcohol Abuse	44
Alcohol Dependence	29
Cannabis Abuse	14
Cannabis Dependence	8

Table S2. Self-reported ethnicity.

	n
White	311
Black	73
Asian	173
Latino	40
Multi	2
Other	62

Table S3. CRHR1 FAAH Interaction Predicting Basolateral Amygdala Habituation

	Left Basolateral Amygdala		Right Basolateral Amygdala	
Variable	**β**	***p***	**β**	***p***
Sex	-0.0297	0.2054	-0.0057	0.7754
PC1	**0.9375**	**0.0334**	0.6662	0.0741
PC2	-0.2296	0.6654	0.1360	0.7623
PC3	-0.2371	0.5240	-0.2726	0.3872
PC4	-0.3656	0.3141	-0.4343	0.1581
PC5	-0.0940	0.8086	-0.0502	0.8785
FAAH rs324420	-0.0009	0.9691	0.0021	0.9184
CRHR1 rs110402	0.0446	0.1408	0.0341	0.1832
Sex x FAAH rs324420	-0.0801	0.0993	**-0.0816**	**0.0474**
Sex x CRHR1 rs110402	-0.0459	0.3430	-0.0509	0.2146
PC1 x FAAH rs324420	-0.9016	0.2650	-1.2458	0.0692
PC1 x CRHR1 rs110402	1.3255	0.0964	1.0682	0.1136
PC2 x FAAH rs324420	0.1552	0.8103	-0.4624	0.3986
PC2 x CRHR1 rs110402	0.9763	0.4620	-0.1352	0.9043
PC3 x FAAH rs324420	-1.3734	0.0709	-0.8278	0.1984
PC3 x CRHR1 rs110402	0.4206	0.5407	-0.0213	0.9709
PC4 x FAAH rs324420	-0.6608	0.3297	-0.5987	0.2972
PC4 x CRHR1 rs110402	-0.4158	0.5728	0.1252	0.8411
PC5 x FAAH rs324420	0.0137	0.9843	0.2030	0.7301
PC5 x CRHR1 rs110402	**-1.6884**	**0.0143**	**-1.3573**	**0.0201**
CRHR1 x FAAH	**-0.1667**	**0.0067**	**-0.1418**	**0.0065**

Standardized beta and *p* values are presented for each predictor.
Any predictor significant at $p < 0.05$ is bolded.

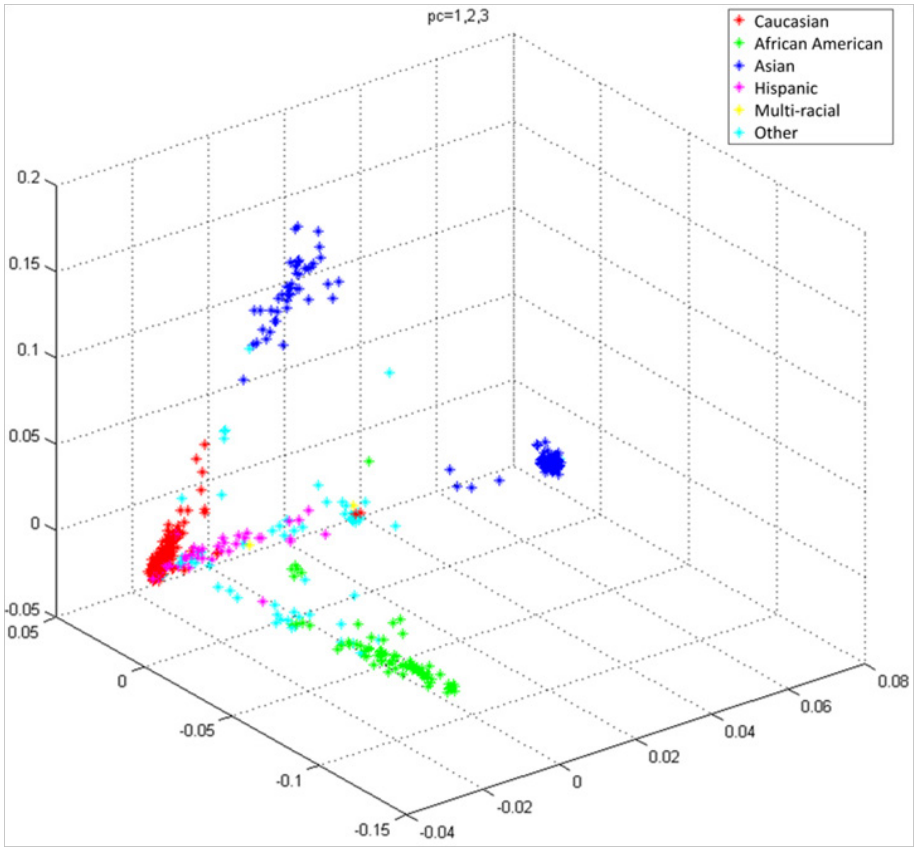

Figure S1. Principal components and self-reported ancestry. Plot showing the top 3 principal components account for the various groups within the population.

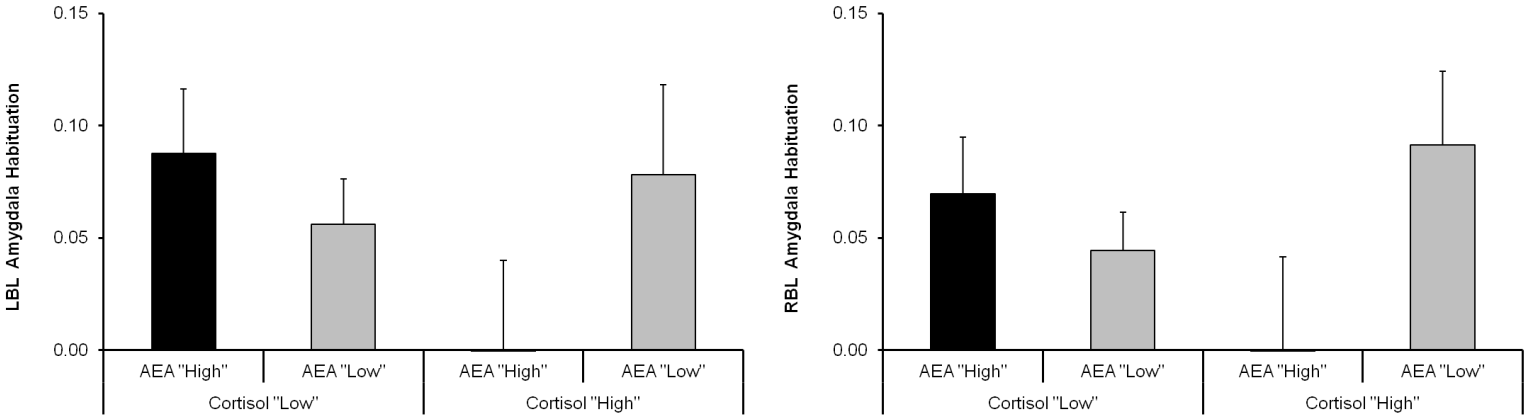

Figure S2. Genetic polymorphisms affecting anandamide and CRHR1 signaling predict basolateral amygdala function in European/European Americans. Post-hoc analyses demonstrated no significant differences between groups. Error bars indicate SEM.

Supplemental Analyses

We completed additional analyses evaluating left basolateral (BL) amygdala habituation and alcohol use disorder, as well as diagnosis of any DSM-IV disorder. There were no significant associations between left BL amygdala habituation and alcohol use disorder: $t_{(661)} = 1.531$, $p = .126$, or diagnosis of any DSM-IV disorder: $t_{(661)} = .227$, $p = .82$. Additional specific disorder analyses are not possible in this sample due to the limited prevalence of specific disorders. However, we did examine whether the *FAAH* x *CRHR1* interaction was predictive of alcohol use disorder (i.e., DSM-IV alcohol abuse or dependence), or any Axis I disorder and found no support; alcohol use disorder ($b = -.516$, $p = .427$), any Axis I disorder ($b = -0.134$, $p = .802$).