

Atopic Dermatitis (Eczema)

2/23/21

Tyler Jones

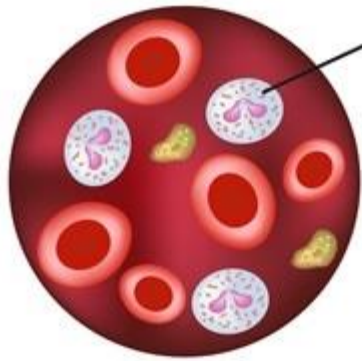


Introduction to Atopic Dermatitis

Eosinophilia

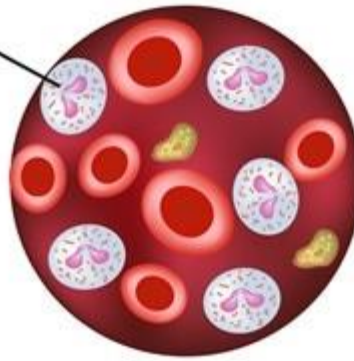
(eosinophils above normal range in blood)

Eosinophil



Normal

Eosinophils normal range



Eosinophilia

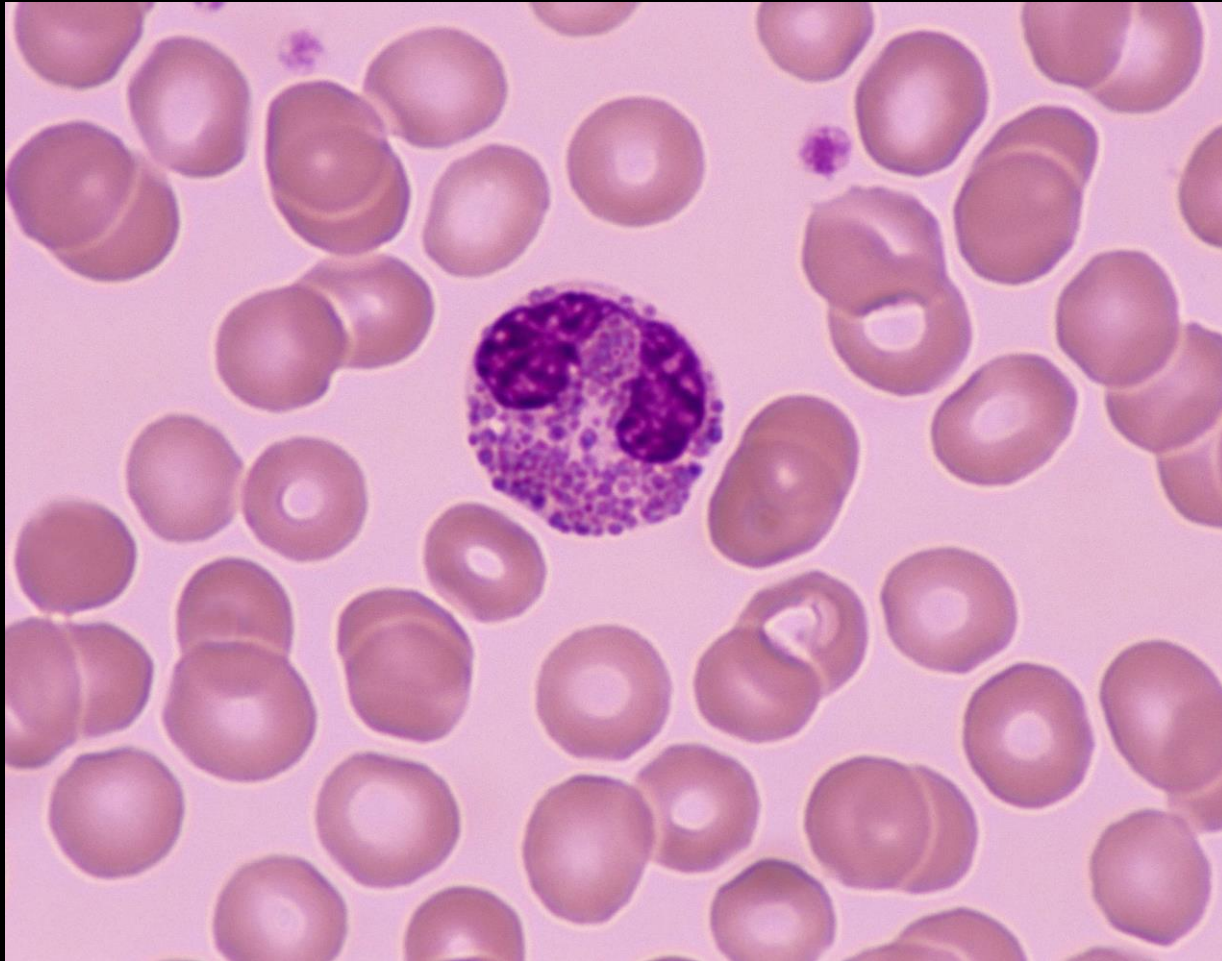
Eosinophils above normal range

Relation to Autoimmune diseases

Eosinophil counts:

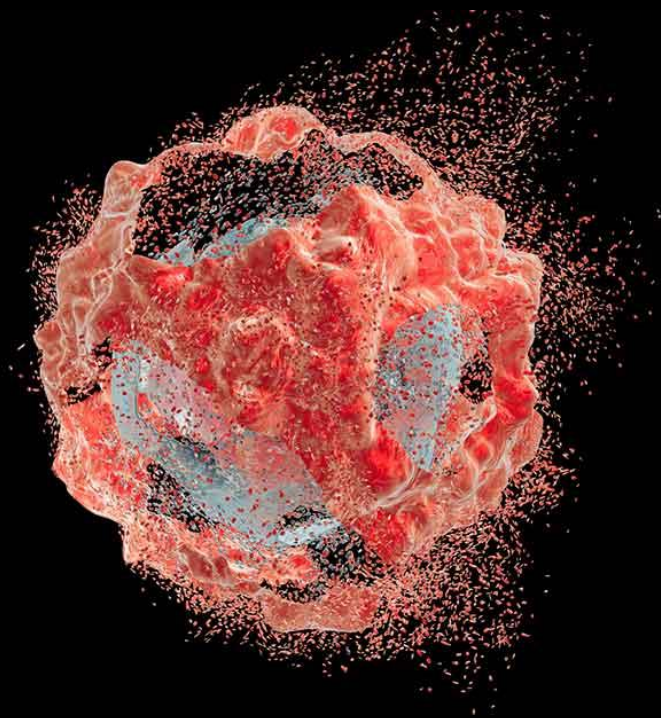
Normal ~ 113.3 eosinophils/ μL

AD ~ 290.0 eosinophils / μL



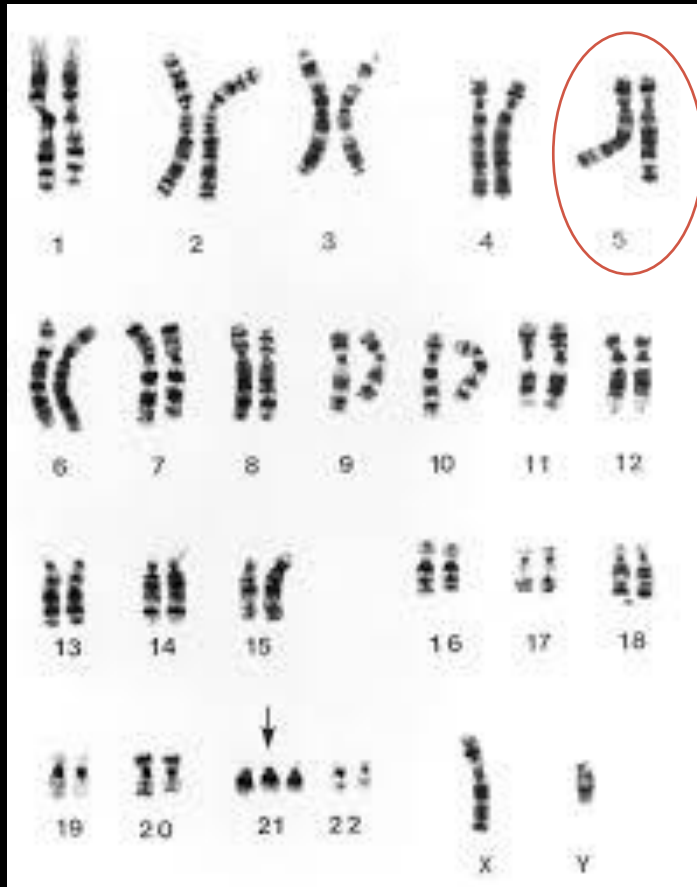
Eosinophils

- White Blood Cells
- Associated with allergic reaction
- Can lead to inflammation and tissue damage



Fas associated factor family member 2

FAF2



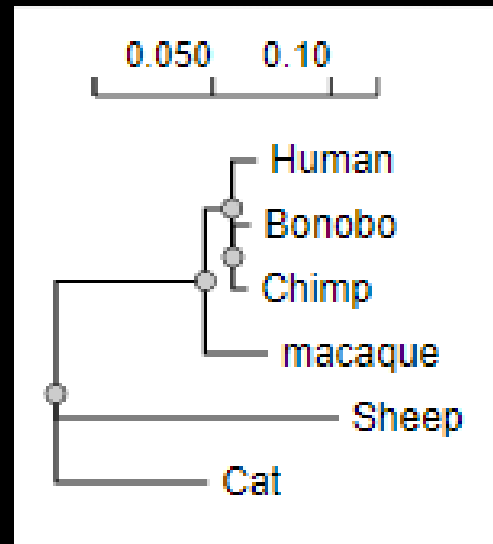
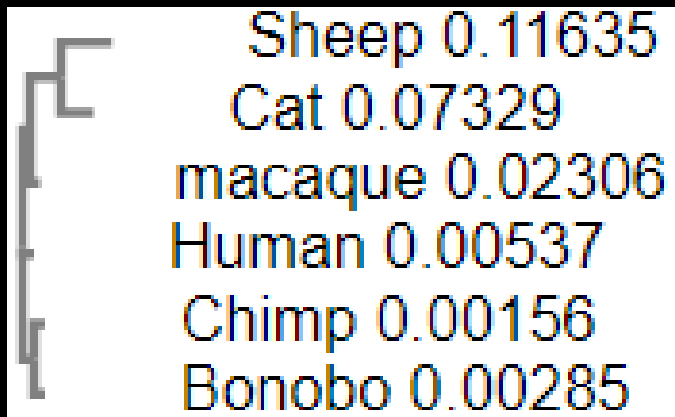
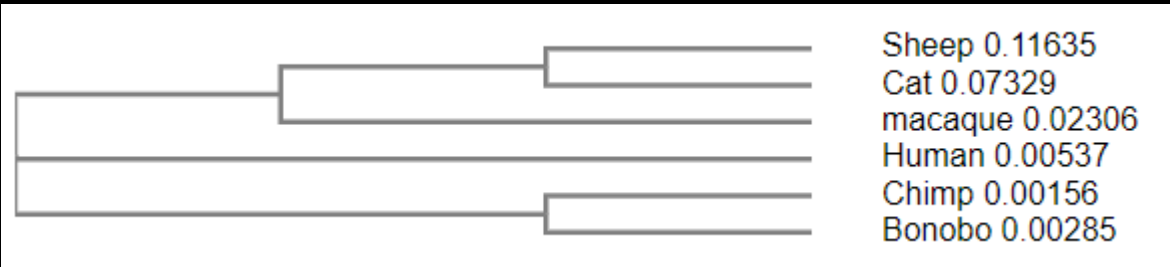
FAF2

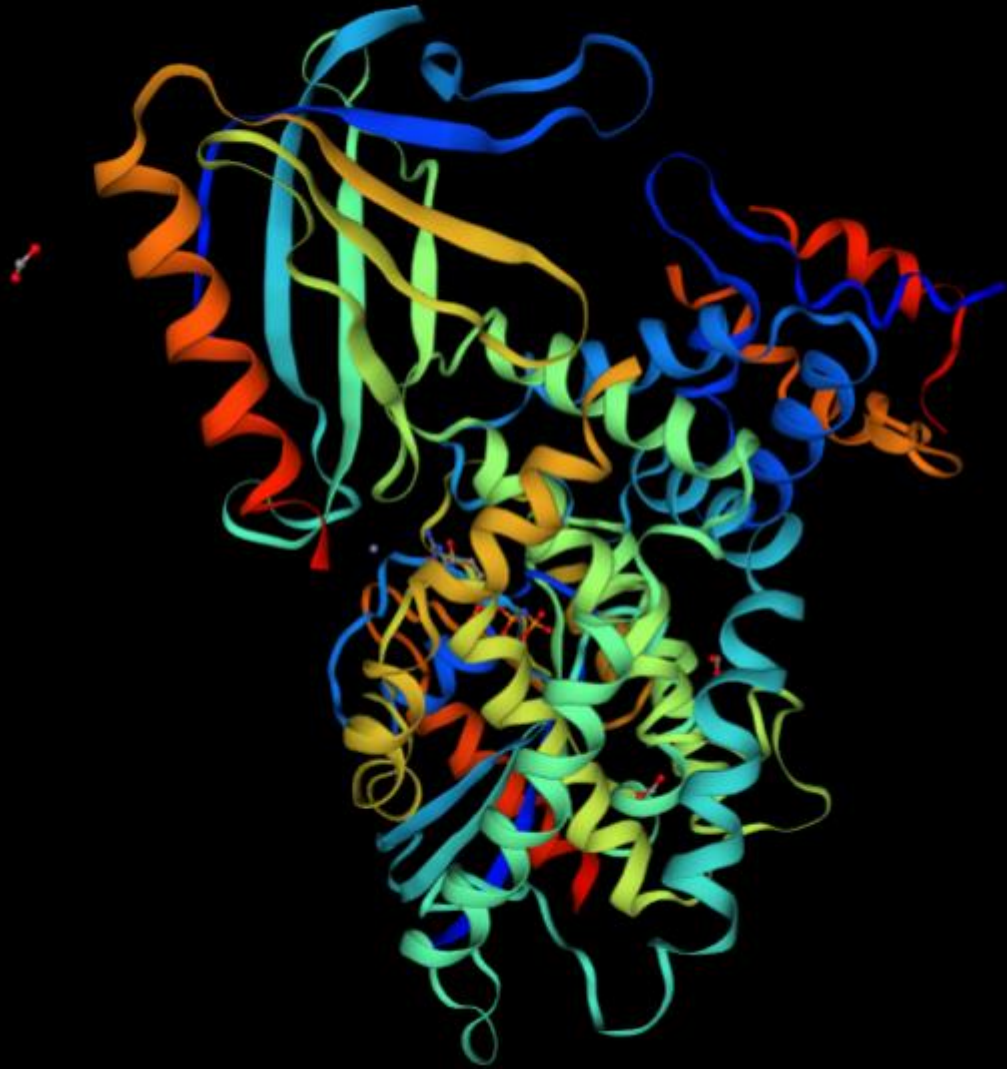
Highly Expressed in
those with atopic
dermatitis

(176448328, 176510074)

Multiple Sequence Alignment

Mammals found with sequences similar to this gene

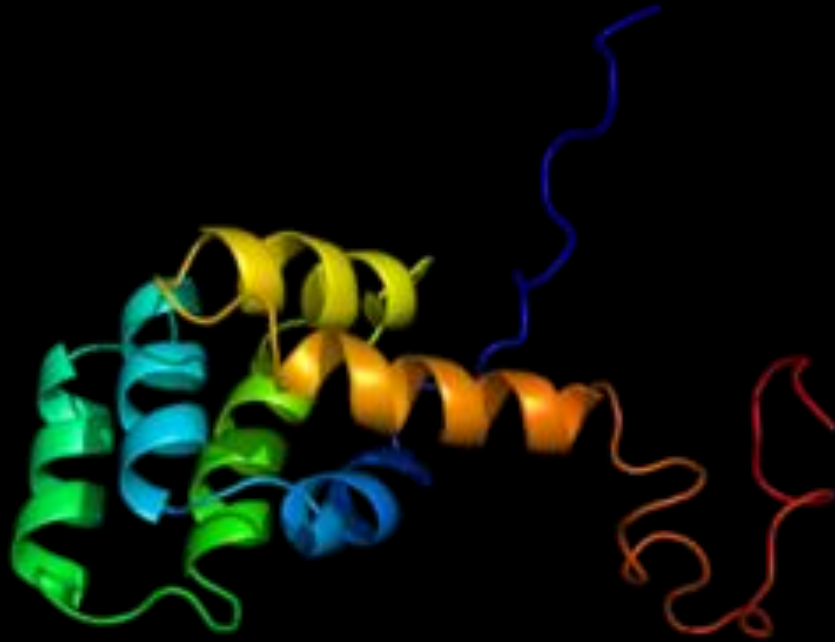




Conserved Domains

UBA and UBX
Domains

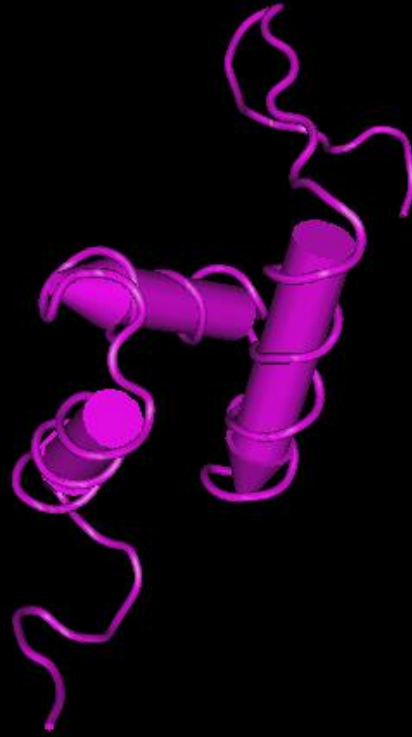
Down Regulation
Neurofibromin 1



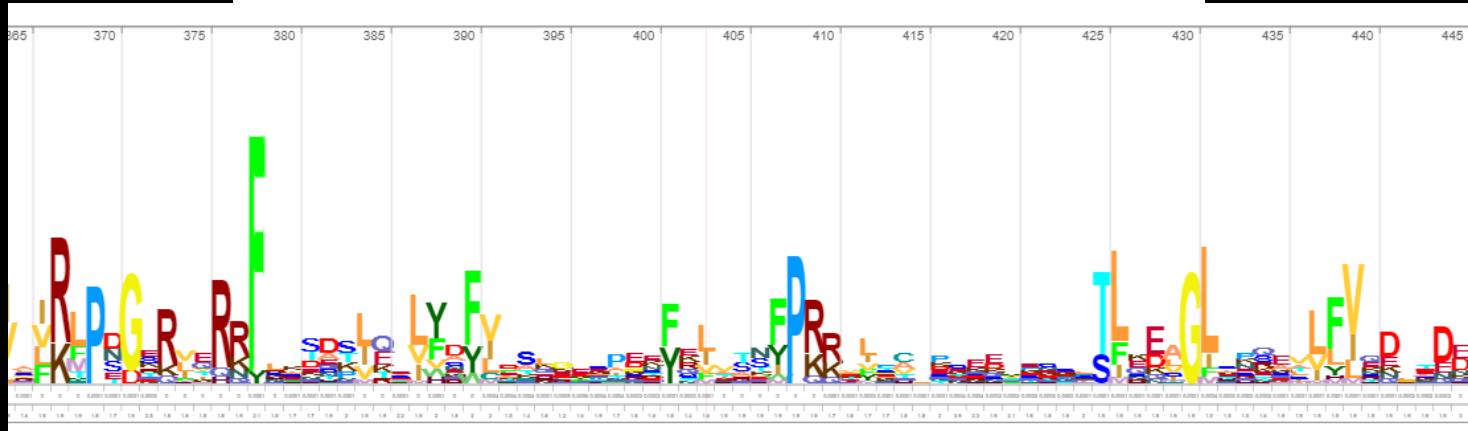
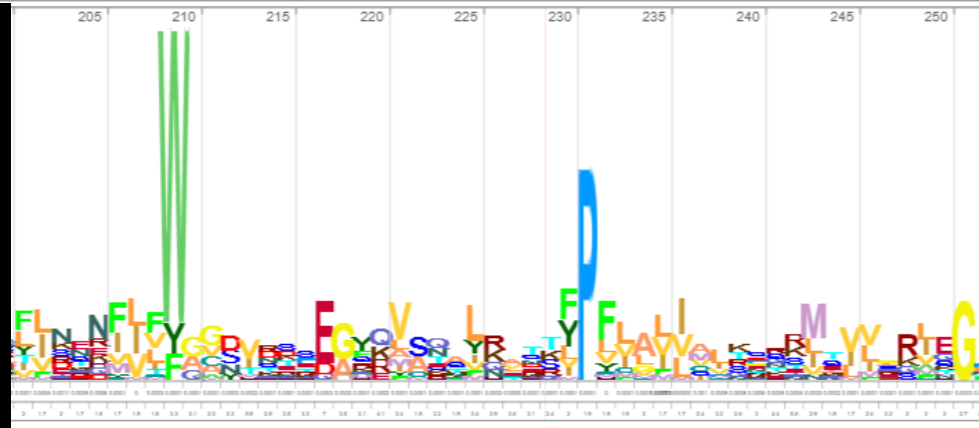
FAF1 and FAF2

FAF1 related to FAS
receptor

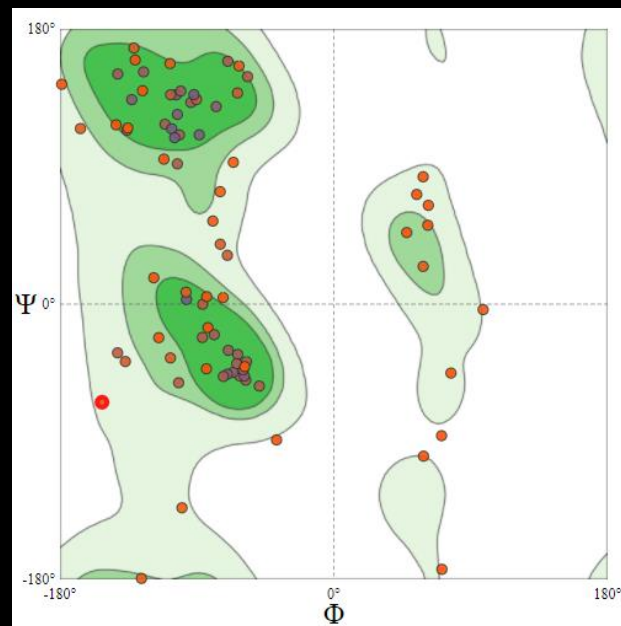
FAF2 Not fully
understood



UBX domain containing 8, isoform /
ETEA



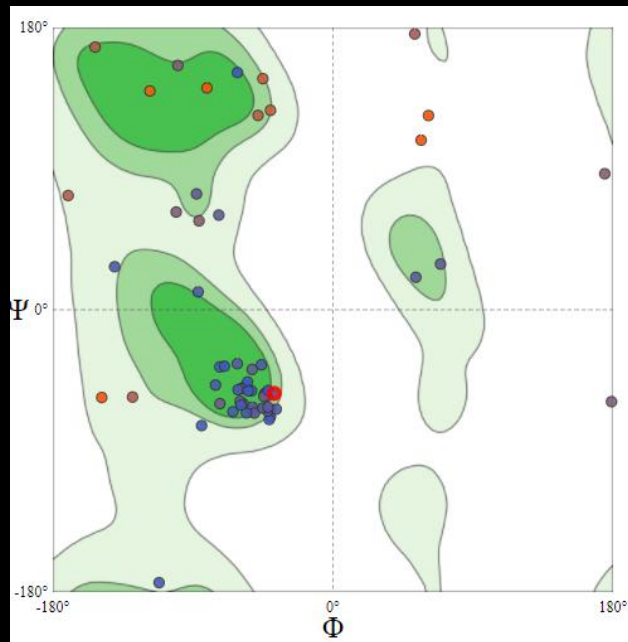
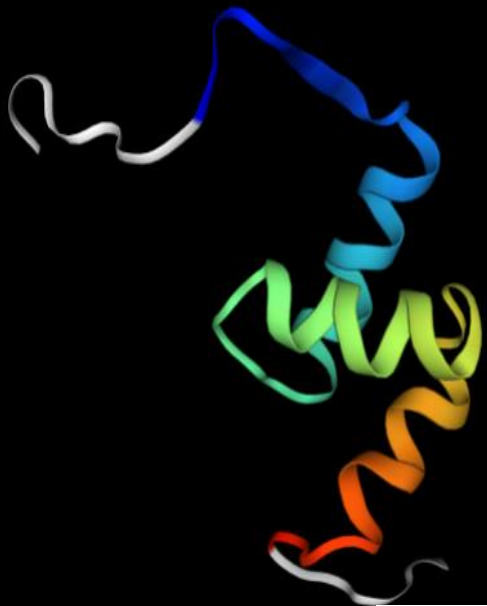
Conserved Domains



UBX model

MolProbity Results			
MolProbity Score	2.56		
<input type="checkbox"/> Clash Score	6.16	(A57 GLN-A107 ASP)	
Ramachandran Favoured	74.44%		
<input type="checkbox"/> Ramachandran Outliers	8.89%	A75 ASN, A108 LYS, A131 GLN, A122 ILE, A128 PRO, A127 LYS, A129 VAL, A132 PRO	
<input type="checkbox"/> Rotamer Outliers	3.61%	A67 LEU, A69 LYS, A88 GLN	
<input type="checkbox"/> C-Beta Deviations	4	A119 LYS, A75 ASN, A129 VAL, A142 SER	
Bad Bonds	0 / 744		
<input type="checkbox"/> Bad Angles	16 / 999	A61 VAL, A107 ASP, (A126 THR-A127 LYS), (A127 LYS-A128 PRO), A70 ASN, (A74 VAL-A75 ASN), A142 SER, A138 HIS, A75 ASN, A103 GLN, A76 ASP, A112 ASP, A130 PHE, A129 VAL, A109 GLU	
<input type="checkbox"/> Twisted Prolines	1 / 4	(A127 LYS-A128 PRO)	

Results obtained using MolProbity version 4.4

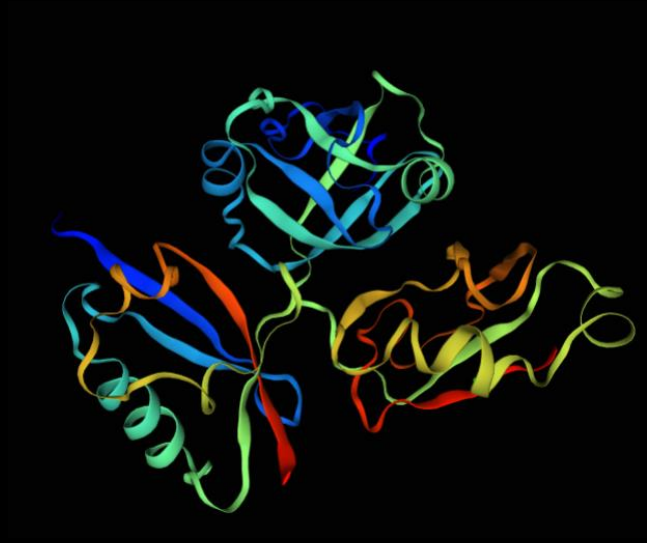


UBA model

MolProbity Results			
	MolProbity Score	4.01	
<input type="checkbox"/>	Clash Score	28.51	(A17 HIS-A17 HIS), (A28 ALA-A53 PHE), (A17 HIS-A21 ILE), (A16 ARG-A20 MET), (A23 GLN-A26 LEU), (A24 PHE-A50 LEU), (A37 GLN-A41 ALA), (A25 VAL-A29 GLY), (A17 HIS-A18 GLN), (A14 GLU-A15 LEU), (A45 GLN-A46 PHE), (A38 LEU-A42 ALA), (A20 MET-A21 ILE)
	Ramachandran Favoured	54.69%	
<input type="checkbox"/>	Ramachandran Outliers	10.94%	A21 ILE, A63 HIS, A6 SER, A2 SER, A62 SER, A4 GLY, A58 ASN
<input type="checkbox"/>	Rotamer Outliers	29.63%	A58 ASN, A56 GLU, A36 LYS, A64 HIS, A55 GLN, A65 HIS, A15 LEU, A2 SER, A33 ASP, A62 SER, A43 HIS, A14 GLU, A8 MET, A18 GLN, A17 HIS, A16 ARG
	C-Beta Deviations	0	
<input type="checkbox"/>	Bad Bonds	12 / 521	A66 HIS, A63 HIS, A43 HIS, A17 HIS, A64 HIS, A65 HIS
	Bad Angles	0 / 704	

Results obtained using MolProbity version 4.4

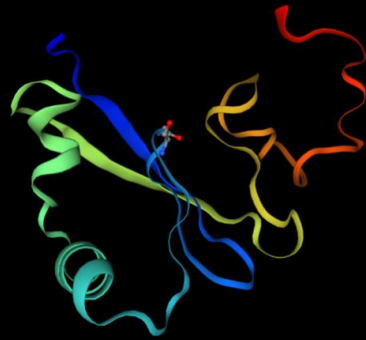
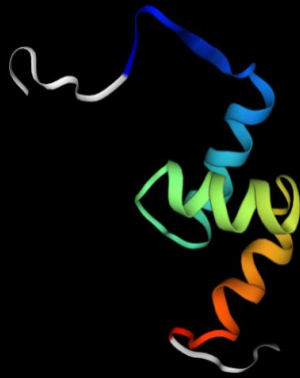
FAF1



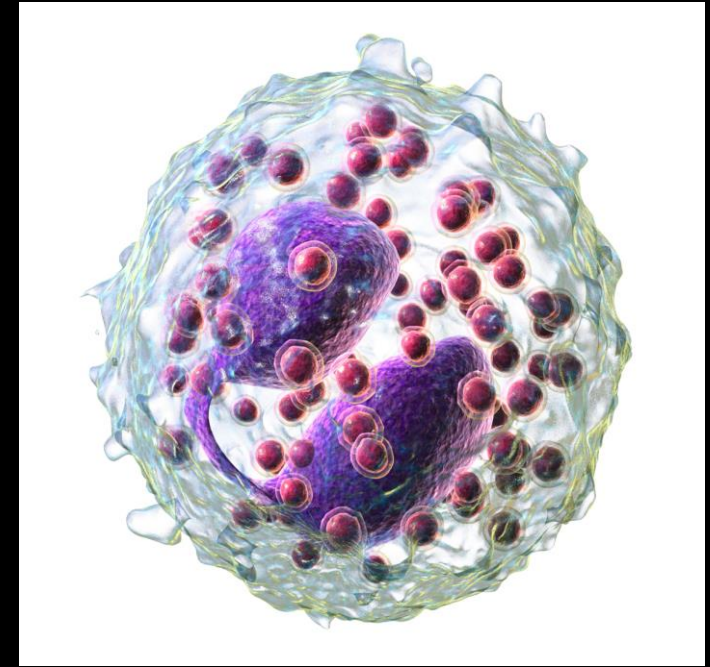
UBA

UBX

FAF2



Comparison to
FAF1



Possible Future Exploration

Bibliography

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