

SUPPLEMENTARY FIGURES

Figure 1. ACPP prediction form for the sample sequence.

The screenshot displays the ACPP prediction form. At the top, a navigation bar includes links for Home, Predict, Instruction, Supplementary, Retrieve Job, and Contact. The main content area is titled "Predict" and contains several input fields and options:

- Job Title:** A text input field with "Example" entered.
- Protein Scan:** A radio button option that is selected.
- Peptide fragment Length:** A text input field with "10" entered.
- Check query protein for Apoptosis function:** A checked checkbox.
- Multiple peptides:** An unselected radio button option.
- Single peptide with mutations:** An unselected radio button option.
- Mutation Pattern:** A text input field with "(help)" as a placeholder.
- Input Single or Multiple Peptide (FASTA format):** A text area containing a sample FASTA sequence:

```
>Case_Study
MDGSGEQLGSGGPTTSSEQIMKTGAFLLQGGFIQDRAGRMAGETPELTLEQPP
QDASTKRLS
ECLRRIGDELDSNIMELQRMIADVDTSPREVFRRVAADMFDGDFNFWGRVV
ALYFASKL
VLKALCTKVEPELIRITIMGWTLDFLRERLLVWIQQGGWEGLLSYFGPTTWQ
TVTIFVAGV
LTASLTIWKKMG
```
- Threshold:** A text input field with "0.5" entered.

On the right side of the form, there are three sections:

- Other Tools:** A list of links for SCLAP, APSLAP, DualPred, and FuzzyAPP.
- Useful Links:** A list of links for SVM, AdaBoost, and Anti cancer peptide database.
- Wise Words:** A quote: "Great acts are made up of small deeds." attributed to Lao Tzu.

Figure 2. ACPP output for the sample sequence mentioned in application section

ACPP
Anti-cancer peptide predictor

Home Predict Instruction Supplementary Retrive Job Contact

Result

Result for the Job Titled – Example(Download result as [CSV](#))
Highly similar protein to the query sequence does not have any Biological process assigned as "Apoptosis".
Associated Gene Ontology ID with the GO term "Apoptosis" for the query protein is/are GO:0042981 .

Domain Search Output (Text)
Domain Search Output (Image)

Peptide	Prediction	SVM Score	Mol.Wt (Da)	Hb (%)	Hp (%)	Charge
>1-10 IDGSGEQLGS	NACP	0.01	980.35	20%	30%	-2.00
>2-11 DGSGEQLGSG	NACP	0.03	906.20	10%	30%	-2.00
>3-12 GSGEQLGSGG	NACP	0.06	848.17	10%	20%	-1.00
>4-13 SGEQLGSGGP	NACP	0.03	888.24	10%	20%	-1.00
>5-14						

Figure 3. The domain search result reported by ACPP for the sample sequence mentioned in the Application section. Positions with apoptotic domains are highlighted.

Submitted	9a6e2c04548ec78d172f4526350537f7	192	SUPERFAMILY	SSF56854	1	191	0.0	T	15-09-2014		
Submitted	9a6e2c04548ec78d172f4526350537f7	192	ProSiteProfiles	PSS0062	BCL2-like apoptosis inhibitors family profile.			63	160	0.0	
T	15-09-2014		IPR002475	Bcl2-like	GO:0042981						
Submitted	9a6e2c04548ec78d172f4526350537f7	192	TMHMM	TMhelix	Region of a membrane-bound protein predicted to be embedded in the membrane.						
169	188	-	T	15-09-2014							
Submitted	9a6e2c04548ec78d172f4526350537f7	192	PANTHER	PTHR11256:SF8	10	191	0.0	T	15-09-2014	IPR026304	
Submitted	9a6e2c04548ec78d172f4526350537f7	192	ProSitePatterns	PS01080	Apoptosis regulator, Bcl-2 family BH1 motif signature.			99	118		
-	T	15-09-2014	IPR020717	Apoptosis regulator, Bcl-2, BH1 motif, conserved site	GO:0042981						
Submitted	9a6e2c04548ec78d172f4526350537f7	192	Phobius	NON_CYTOPLASMIC_DOMAIN	Region of a membrane-bound protein predicted to be outside the						
membrane, in the extracellular region.	1	169	-	T	15-09-2014						
Submitted	9a6e2c04548ec78d172f4526350537f7	192	PRINTS	PRO1862	Bcl-2 apoptosis regulator protein family signature			92	104		
6.900014786E-20	T	15-09-2014	IPR026298	Bcl2 family	GO:0042981						
Submitted	9a6e2c04548ec78d172f4526350537f7	192	PRINTS	PRO1862	Bcl-2 apoptosis regulator protein family signature			135	159		
6.900014786E-20	T	15-09-2014	IPR026298	Bcl2 family	GO:0042981						
Submitted	9a6e2c04548ec78d172f4526350537f7	192	PRINTS	PRO1862	Bcl-2 apoptosis regulator protein family signature			106	134		
6.900014786E-20	T	15-09-2014	IPR026298	Bcl2 family	GO:0042981						
Submitted	9a6e2c04548ec78d172f4526350537f7	192	ProSitePatterns	PS01259	Apoptosis regulator, Bcl-2 family BH3 motif signature.			59	73		
-	T	15-09-2014	IPR020728	Apoptosis regulator, Bcl-2, BH3 motif, conserved site	GO:0042981						
Submitted	9a6e2c04548ec78d172f4526350537f7	192	Phobius	TRANSMEMBRANE	Region of a membrane-bound protein predicted to be embedded in the						
membrane.	170	188	-	T	15-09-2014						
Submitted	9a6e2c04548ec78d172f4526350537f7	192	Pfam	PF00452	Apoptosis regulator proteins, Bcl-2 family			63	158	5.3E-24	T
15-09-2014	IPR026298		Bcl2 family	GO:0042981							
Submitted	9a6e2c04548ec78d172f4526350537f7	192	Gene3D	G3DSA:1.10.437.10	7	191	5.1E-54	T	15-09-2014		
Submitted	9a6e2c04548ec78d172f4526350537f7	192	Phobius	CYTOPLASMIC_DOMAIN	Region of a membrane-bound protein predicted to be outside the						
membrane, in the cytoplasm.	189	192	-	T	15-09-2014						
Submitted	9a6e2c04548ec78d172f4526350537f7	192	SMART	SM00337	BCL (B-Cell lymphoma); contains BH1, BH2 regions			63	158		
1.400005069E-38	T	15-09-2014									
Submitted	9a6e2c04548ec78d172f4526350537f7	192	PANTHER	PTHR11256	10	191	0.0	T	15-09-2014	IPR026298	
Bcl2 family	GO:0042981										
Submitted	9a6e2c04548ec78d172f4526350537f7	192	ProSitePatterns	PS01258	Apoptosis regulator, Bcl-2 family BH2 motif signature.			151	162		
-	T	15-09-2014	IPR020726	Apoptosis regulator, Bcl-2, BH2 motif, conserved site	GO:0042981						

Figure 4. Filtering of CSV output from ACPP using Microsoft Excel. The highlighted peptides are considered to be possessing anti-cancer property with apoptotic domain.

1	Peptide	Prediction	SVM Score	MolWt	Hydropho	Hydrophil	Charge
111	110-119 VVALFYFASK	ACP	0.708	1144.43	50%	10%	1
114	113-122 LFYFASKLVL	ACP	0.779	1200.55	60%	10%	1
115	114-123 FYFASKLVLK	ACP	0.941	1215.56	50%	20%	2
116	115-124 YFASKLVLKA	ACP	0.891	1139.46	40%	20%	2
117	116-125 FASKLVLKAL	ACP	0.845	1089.45	50%	20%	2
119	118-127 SKLVLKALCT	ACP	0.743	1075.44	50%	20%	2
120	119-128 KLVLKALCTK	ACP	0.913	1116.54	50%	30%	3
121	120-129 LVLKALCTKV	ACP	0.789	1087.5	60%	20%	2
123	122-131 LKALCTKVPE	ACP	0.722	1101.43	40%	30%	1
182	181-190 LTASLTIVKK	ACP	0.907	1160.48	40%	20%	2
183	182-191 TASLTIVKKM	ACP	0.921	1178.52	40%	20%	2
184	183-192 ASLTIVKKMG	ACP	0.843	1134.47	40%	20%	2
185							
186							
187							
188							