

Figure S1. STRING interaction of the commonly expressed proteins. The individual network of protein interaction of the commonly expressed proteins: (A) OFD1, (B) VINC, (C) HIPR1, (D) CA2D1, (E) PIK3CB, (F) VAV1 and (G) CIP2A using STRING database. OFD1, oral-facial-digital syndrome 1 protein; VINC, vinculin; HIPR1, Huntingtin-interacting protein 1-related protein; CA2D1, voltage-dependent calcium channel subunit  $\alpha$ -2 $\delta$ -1; PIK3CB, phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit  $\beta$  isoform; VAV1, Vav guanine nucleotide exchange factor 1; CIP2A, cancerous inhibitor of protein phosphatase 2A.

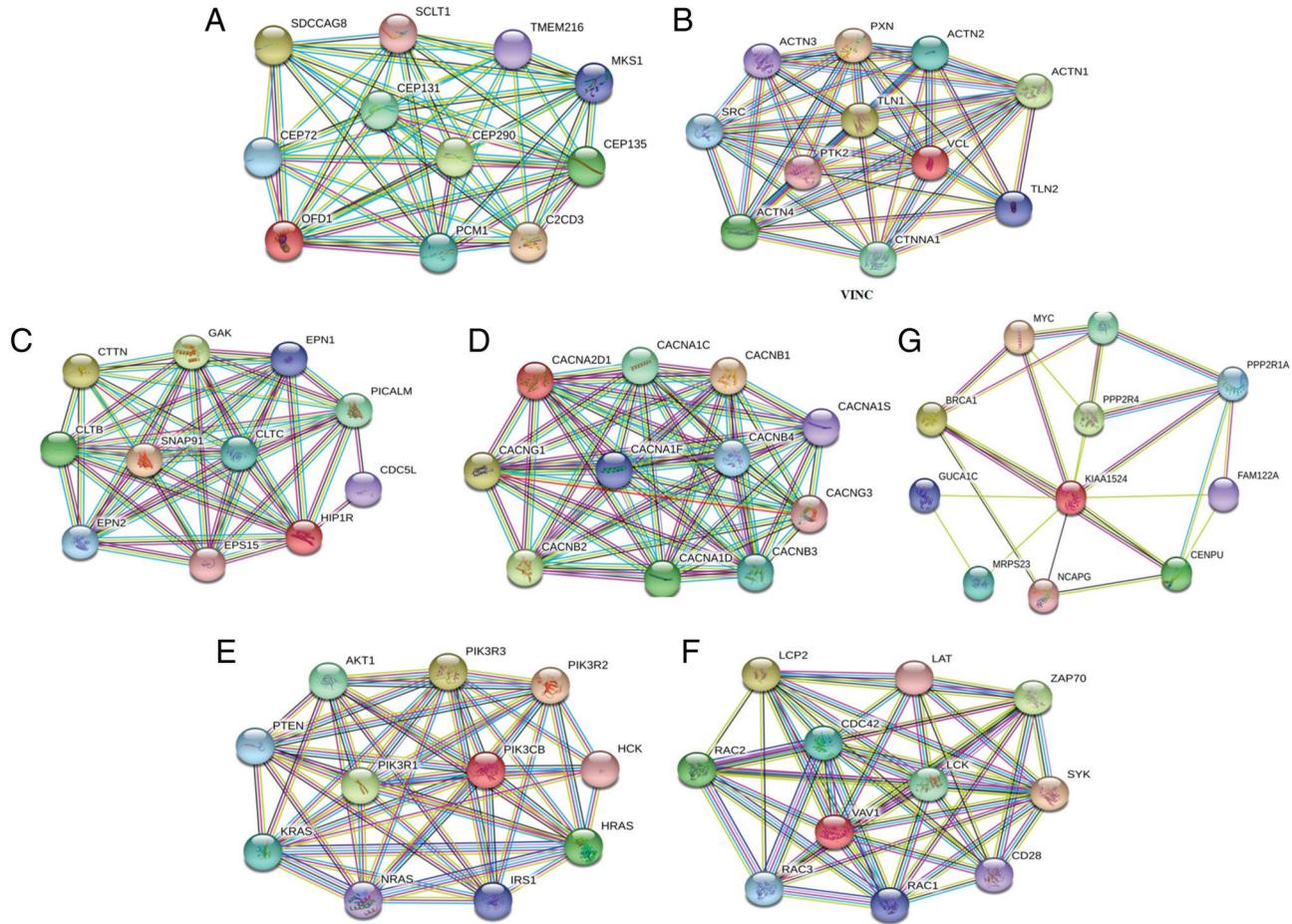


Figure S2. Ligand-interaction diagram and Molecular docking of the target proteins with SCU. The amino acid residues in the proteins showing stable hydrogen bonding with SCU and molecular binding models of the structures CIP2A and VAV1 against SCU. (A) The LigPlot of protein CIP2A with SCU. (B) The LigPlot of protein VAV1 with SCU. (C) The binding model of protein CIP2A complexed with SCU. (D) The binding model of protein VAV1 complexed with SCU. SCU, Scutellarein; CIP2A, cancerous inhibitor of protein phosphatase 2A; VAV1, Vav guanine nucleotide exchange factor 1.

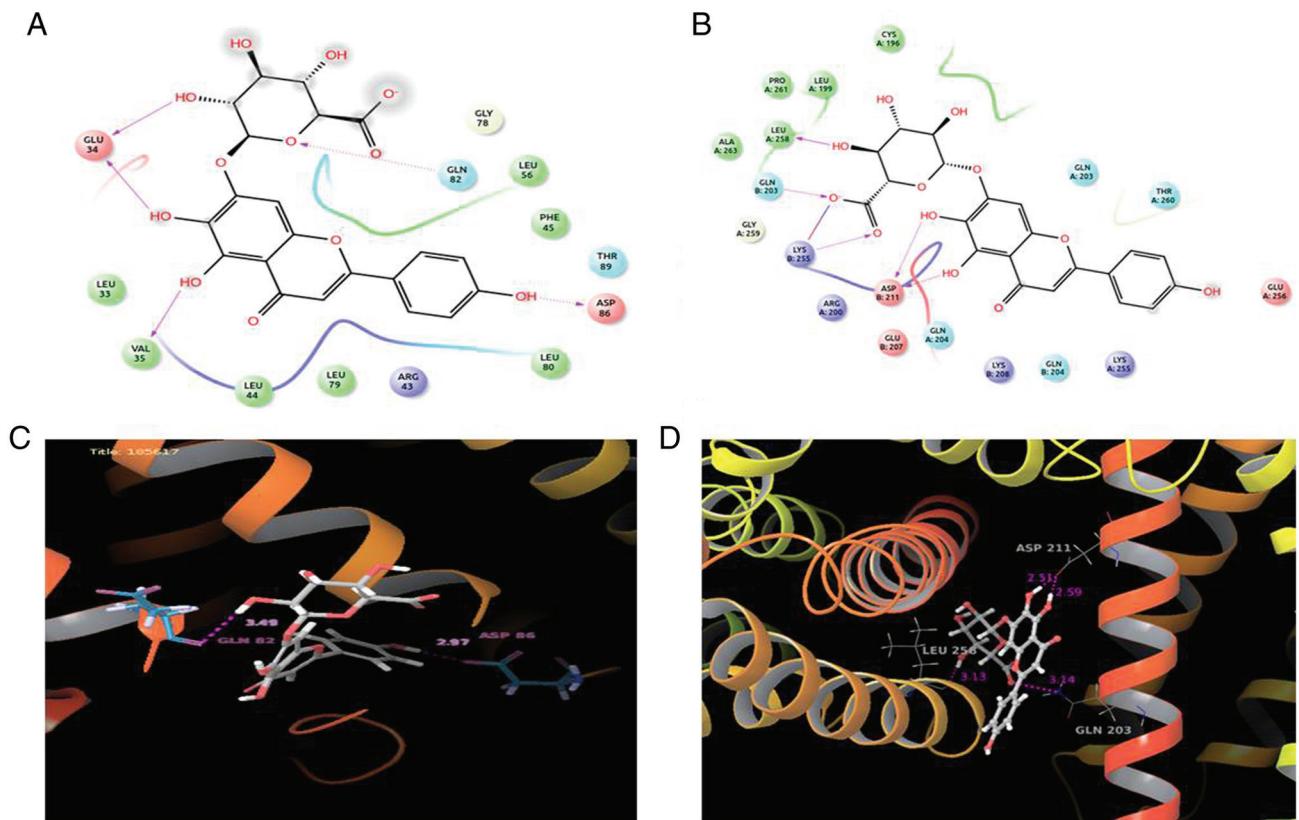


Table SI. List of genes involved in different pathways in AGS cells treated with Scutellarein by PANTHER analysis.

AGS cell line			
Sr. No.	Gene symbol	Description	Pathway (ID)
1	<i>AKT3</i> <i>PIK3CB</i> <i>PDGFRA</i> <i>PIK3CA</i>	RAC-γ serine/threonine-protein kinase Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β Platelet-derived growth factor receptor α Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit α	Angiogenesis (P00005)
2	<i>AKT3</i> <i>PIK3CB</i> <i>PIK3CA</i>	RAC-γ serine/threonine-protein kinase Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit α	Apoptosis signaling pathway (P00006)
3	<i>PIK3CB</i> <i>PIK3CA</i>	Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit α	Axon guidance mediated by netrin (P00009)
4	<i>VAV1</i> <i>PIK3CB</i> <i>PIK3CA</i>	Proto-oncogene vav Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit α	B cell activation (P00010)
5	<i>ITGB1</i> <i>PIK3CB</i>	Integrin β-1 Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β	CCKR signaling map (P06959)
6	<i>AKT3</i> <i>PIK3CB</i> <i>PIK3CA</i>	RAC-γ serine/threonine-protein kinase Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit α	EGF receptor signaling pathway (P00018)
7	<i>AKT3</i> <i>PIK3CB</i> <i>PIK3CA</i>	RAC-γ serine/threonine-protein kinase Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit α	Endothelin signaling pathway (P00019)
8	<i>AKT3</i> <i>PIK3CB</i> <i>PIK3CA</i>	RAC-γ serine/threonine-protein kinase Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit α	FGF signaling pathway (P00021)
9	<i>NR3C1</i> <i>VCL</i> <i>ITGB1</i>	Glucocorticoid receptor Vinculin Integrin β-1	Gonadotropin-releasing hormone receptor pathway (P06664)
10	<i>HIP1R</i> <i>AKT3</i>	Huntingtin-interacting protein 1-related protein RAC-γ serine/threonine-protein kinase	Huntington disease (P00029)
11	<i>AKT3</i> <i>PIK3CB</i> <i>PIK3CA</i>	RAC-γ serine/threonine-protein kinase Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit α	Hypoxia response via HIF activation (P00030)
12	<i>VAV1</i> <i>AKT3</i> <i>ITGB1</i> <i>PIK3CB</i> <i>PIK3CA</i> <i>ITGA4</i>	Proto-oncogene vav RAC-γ serine/threonine-protein kinase Integrin β-1 Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit α Integrin α-4	Inflammation mediated by chemokine and cytokine signaling pathway (P00031)
13	<i>PIK3CB</i> <i>PIK3CA</i>	Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit α	Insulin/IGF pathway-protein kinase B signaling cascade (P00033)
14	<i>VCL</i> <i>ITGB1</i> <i>PIK3CB</i> <i>PIK3CA</i> <i>ITGA4</i>	Vinculin Integrin β-1 Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit α Integrin α-4	Integrin signalling pathway (P00034)
15	<i>AKT3</i> <i>PIK3CB</i> <i>PIK3CA</i>	RAC-γ serine/threonine-protein kinase Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit α	Interleukin signaling pathway (P00036)
16	<i>CACNA2D1</i>	Voltage-dependent calcium channel subunit α-2/δ-1	Muscarinic acetylcholine receptor 2 and 4 signaling pathway (P00043)

Table SI. Continued.

AGS cell line			
Sr. No.	Gene symbol	Description	Pathway (ID)
17	<i>VAV1</i> <i>PIK3CB</i> <i>PDGFRA</i> <i>PIK3CA</i>	Proto-oncogene vav Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β Platelet-derived growth factor receptor α Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit α	PDGF signaling pathway (P00047)
18	<i>AKT3</i> <i>PIK3CB</i> <i>PIK3CA</i>	RAC-γ serine/threonine-protein kinase Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit α	PI3 kinase pathway (P00048)
19	<i>AKT3</i> <i>PIK3CB</i> <i>PIK3CA</i>	RAC-γ serine/threonine-protein kinase Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit α	Ras Pathway (P04393)
20	<i>VAV1</i> <i>AKT3</i> <i>PIK3CB</i> <i>PIK3CA</i>	Proto-oncogene vav RAC-γ serine/threonine-protein kinase Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit α	T cell activation (P00053)
21	<i>UBA6</i>	Ubiquitin-like modifier-activating enzyme 6	Ubiquitin proteasome pathway (P00060)
22	<i>PIK3CB</i> <i>PIK3CA</i>	Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit α	VEGF signaling pathway (P00056)
23	<i>AKT3</i>	RAC-γ serine/threonine-protein kinase	p53 pathway by glucose deprivation (P04397)
24	<i>AKT3</i> <i>PIK3CB</i> <i>PIK3CA</i>	RAC-γ serine/threonine-protein kinase Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit α	p53 pathway feedback loops 2 (P04398)
25	<i>AKT3</i> <i>PIK3CB</i> <i>PIK3CA</i>	RAC-γ serine/threonine-protein kinase Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit α	p53 pathway (P00059)

Table SII. List of genes involved in different pathways in SNU484 cells treated with Scutellarein.

SNU484 cell line			
Sr. No.	Gene symbol	Description	Pathway (ID)
1	<i>EPHB2</i> <i>PIK3CB</i>	Ephrin type-B receptor 2 Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β	Angiogenesis (P00005)
2	<i>PIK3CB</i>	Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β	Apoptosis signaling pathway (P00006)
3	<i>PIK3CB</i>	Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β	Axon guidance mediated by netrin (P00009)
4	<i>VAV1</i> <i>PIK3CB</i>	Proto-oncogene vav Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β	B cell activation (P00010)
5	<i>PIK3CB</i>	Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β	CCKR signaling map (P06959)
6	<i>PIK3CB</i>	Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β	EGF receptor signaling pathway (P00018)
7	<i>PIK3CB</i>	Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β	Endothelin signaling pathway (P00019)
8	<i>PIK3CB</i>	Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β	FGF signaling pathway (P00021)
9	<i>VCL</i>	Vinculin	Gonadotropin-releasing hormone receptor pathway (P06664)
10	<i>ZEB1</i> <i>HIP1R</i>	Zinc finger E-box-binding homeobox 1 Huntingtin-interacting protein 1-related protein	Huntington disease (P00029)
11	<i>PIK3CB</i>	Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β	Hypoxia response via HIF activation (P00030)
12	<i>VAV1</i> <i>PIK3CB</i>	Proto-oncogene vav Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β	Inflammation mediated by chemokine and cytokine signaling pathway (P00031)
13	<i>PIK3CB</i>	Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β	Insulin/IGF pathway-protein kinase B signaling cascade (P00033)
14	<i>VCL</i> <i>PIK3CB</i>	Vinculin Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β	Integrin signalling pathway (P00034)
15	<i>PIK3CB</i>	Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β	Interleukin signaling pathway (P00036)
16	<i>CACNA2D1</i>	Voltage-dependent calcium channel subunit α-2/δ-1	Muscarinic acetylcholine receptor 2 and 4 signaling pathway (P00043)
17	<i>RPS6KC1</i> <i>VAV1</i> <i>EPHB2</i> <i>PIK3CB</i>	Ribosomal protein S6 kinase δ-1 Proto-oncogene vav Ephrin type-B receptor 2 Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β	PDGF signaling pathway (P00047)
18	<i>PIK3CB</i>	Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β	PI3 kinase pathway (P00048)
19	<i>PIK3CB</i>	Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β	Ras Pathway (P04393)
20	<i>VAV1</i> <i>PIK3CB</i>	Proto-oncogene vav Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β	T cell activation (P00053)
21	<i>TLR2</i>	Toll-like receptor 2	Toll receptor signaling pathway (P00054)
22	<i>PIK3CB</i>	Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β	VEGF signaling pathway (P00056)
23	<i>PIK3CB</i>	Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β	p53 pathway feedback loops 2 (P04398)
24	<i>PIK3CB</i>	Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit β	p53 pathway (P00059)