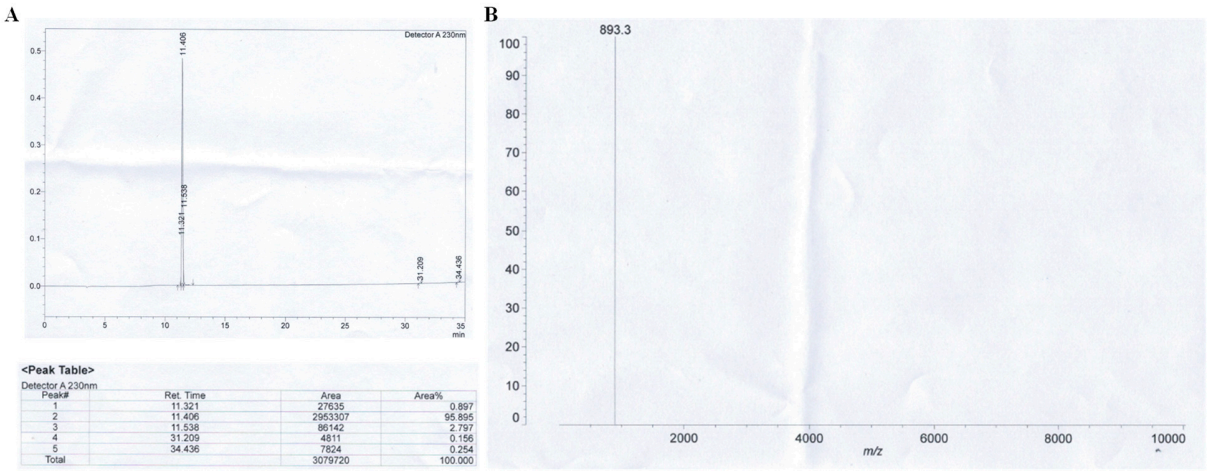
Supplementary Tables

Table S1. Description of primers used in this study.

Gene	Accession number	Primer name	Primer sequence (5'-3')
In vitro			
Cyclin D1 (*CCND1*)	NM_053056.2	CCND1-F	GCGGAGGAGAACAAACAGAT
		CCND1-R	GAGGGCGGATTGGAAATGA
Cyclin dependent kinase inhibitor 1B (*CDKN1B*)	NM_004064.4	CDKN1B -F	GAGCAATGCGCAGGAATAAG
		CDKN1B -R	TCCACAGAACCGGCATTT
MYC proto-oncogene (*MYC*)	NM_002467.6	MYC-F	CTGAGGAGGAACAAGAAGATGAG
		MYC-R	TGTGAGGAGGTTTGCTGTG
Fibroblast growth factor 2 (*FGF2*)	NM_002006.5	FGF2-F	GACCCTCACATCAAGCTACAA
		FGF2-R	AGCCAGTAATCTTCCATCTTCC
Epidermal growth factor (*EGF*)	AY340959.1	EGF-F	ACACATGCTAGTGGCTGAAA
		EGF-R	GCATCCTCTCCCTCTGAAATAC
Transforming growth factor beta 1 (*TGFβ1*)	NM_000660.7	TGFβ1-F	AGAAGGAGAGTTGCCTTTACCGCT
		TGFβ1-R	AACACCCTCCATACACCCGACTTT
Human interleukin 8 (*IL-8*)	M28130.1	IL-8-F	CTTGGCAGCCTTCCTGATTT
		IL-8-R	GGGTGGAAAGGTTTGGAGTATG
vascular endothelial growth factor A (*VEGFA*)	NM_001317010.1	VEGFA-F	AGAAGGAGGAGGGCAGAAT
		VEGFA-R	GTCTCGATTGGATGGCAGTAG
glyceraldehyde-3-phosphate dehydrogenase (*GAPDH*)	NM_002046.3	GAPDH-F	CCCTTCATTGACCTCAACTACA
		GAPDH-R	ATGACAAGCTTCCCGTTCTC
In vivo			
Tumor necrosis factor- α (*tnf-α*)	AF025305	tnf- α-F	AGAAGGAGAGTTGCCTTTACCGCT
		tnf- α-R	AACACCCTCCATACACCCGACTTT
Interleukin-1β (*il-1β*)	AY340959.1	il-1β-F	TCAAACCCCAATCCACAGAG
		il-1β-R	TCACTTCACGCTCTTGGATG
Interleukin-10 (*il-10*)	AY887900.1	il-10-F	CCCTATGGATGTCACGTCATG
		il-10-R	CATATCCCGCTTGAGTTCCTG
Transforming growth factor, β 1 (*tgfβ1*)	XM_687246	tgfβ-1-F	CCCAAGGAACCAGAAGTAGAAG
		tgfβ-1-R	GGATCTTCTATGGTGTGCTGAA
Matrix metalloproteinase 9 (*mmp9*)	AY151254	mmp-9-F	TTTGCCCTGATCGTGGATAC
		mmp-9-R	GGGAAACCCTCCACGTATTT
Matrix metalloproteinase 13 (*mmp13*)	AF506756	mmp-13-F	GAGAAGGTTTGGGCTCTCTATG
		mmp-13-R	TGAGTTGCTGTCTTCCTTGTAG
Tissue inhibitor of metalloproteinase 2 (*timp2b*)	BC056534	timp-2b-F	GCGTTATGTGGAGTCAGTCTT
		timp-2b-R	CTCGATGTAGTCACACAGGTTTAT
Actin alpha 2, smooth muscle, aorta (*acta2*)	AY398305.1	acta2-F	GTGCTGTCTCTCTATGCTTCTG
		acta2-R	GAAGAGCGTAGCCCTCATAAAT
connective tissue growth factor b (*ctgfb*)	XM_005173770.4	ctgfb-F	GGTAGGTCAATCGCATACAGAG
		ctgfb-R	AGAGCATTCGCTCCATTCAG
cadherin 1, type 1, E-cadherin (epithelial) (*cdh1*)	NM_131820.1	cdh1-F	AGCCTCTGGACTATGAGAAGA
		cdh-R	TGACTGTGGCAGTTGAAGTAG
Collagen, type IX, alpha 3 (*col9a3*)	NM_001305573.1	col9a3-F	ATCTTCTGTGTCCTGCCATC
		col9a3-R	CCCAACTCTCCTTTACTTCCTT
β-actin	AF025305	β actin- F	AATCTTGCGGTATCCACGAGACCA
		β actin- R	TCTCCTTCTGCATCCTGTCAGCAA

Supplementary Figures



<Peak Table>
Detector A 230nm

Peak#	Ret. Time	Area	Area%
1	11.321	27635	0.897
2	11.406	2953307	95.895
3	11.538	86142	2.797
4	31.209	4811	0.156
5	34.436	7824	0.254
Total		3079720	100.000

Figure S1. Final purity and molecular weight of synthesized CP-02. (A) Chromatogram of synthesized CP-02 showing the level of final purity; (B) molecular weight (Da).

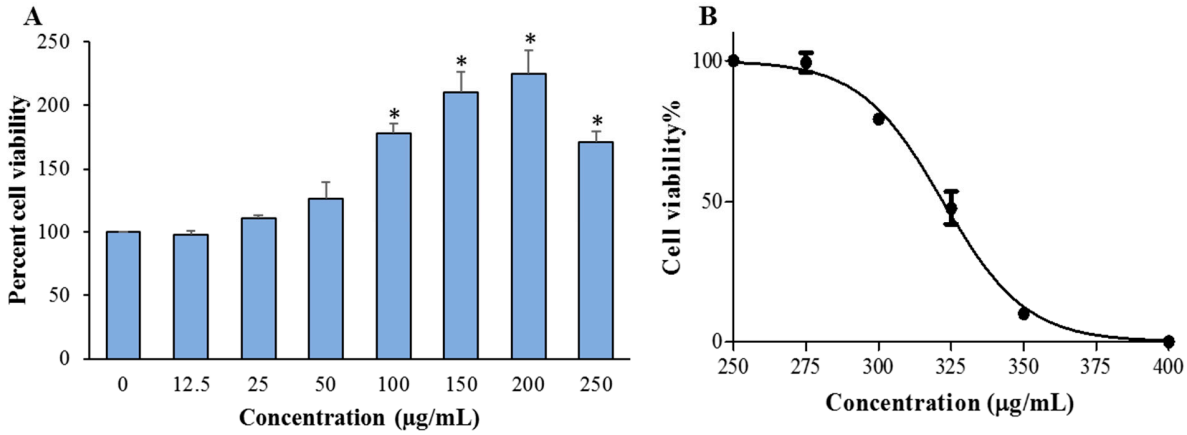


Figure S2. *In vitro* cytotoxicity of CP-02 on HDFs. (A) Cell viability was assessed using an MTT assay following 24 h incubation with increasing concentrations of CP-02 (0 – 400 µg/mL). Results are expressed as a percentage relative to the vehicle-treated control group, which was set at 100% viability. (B) Dose-response curve indicating the percentage of cell viability for CP-02 concentrations >250 µg/mL, used to calculate the IC_{50} value. The IC_{50} of CP-02 on HDFs was determined to be 322 µg/mL. Data are presented as mean ± standard deviation (SD) from three independent experiments. Statistical significance was determined at $p \leq 0.05$.

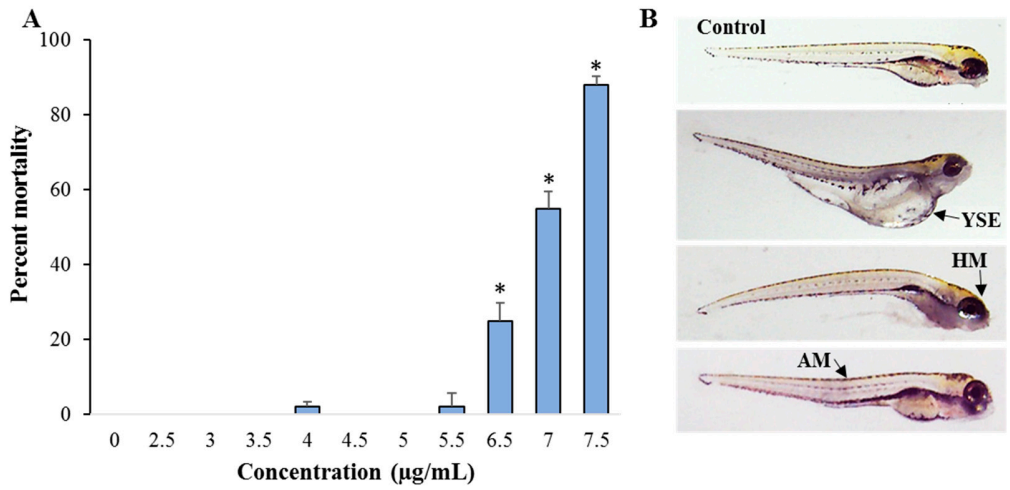


Figure S3. *In vivo* toxicity of CP-02 exposed with zebrafish embryos. (A) Percent mortality of zebrafish embryos exposed to varying concentrations of CP-02 (0 – 7.5 µg/mL). The calculated LD_{50} (lethal dose for 50% mortality) was 6.8 µg/mL. (B) Representative morphological malformations observed in embryos exposed to CP-02 concentrations >6.5 µg/mL. Identified abnormalities include yolk sac edema (YSE), head malformation (HM), and axial malformation (AM). Data are presented as mean ± standard deviation (SD) from three independent replicates. Statistical significance was determined at $p \leq 0.05$.