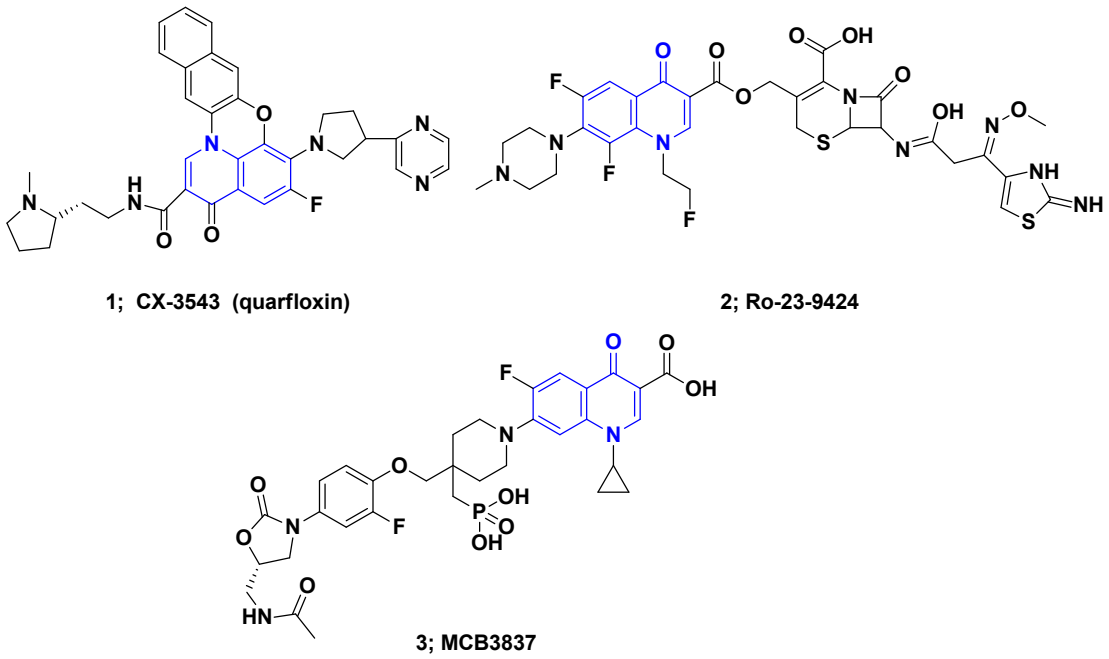


Fig. 1: Chemical structures of CX-3543 (quarfloxin), Ro-23-9424 and MCB3837**.**

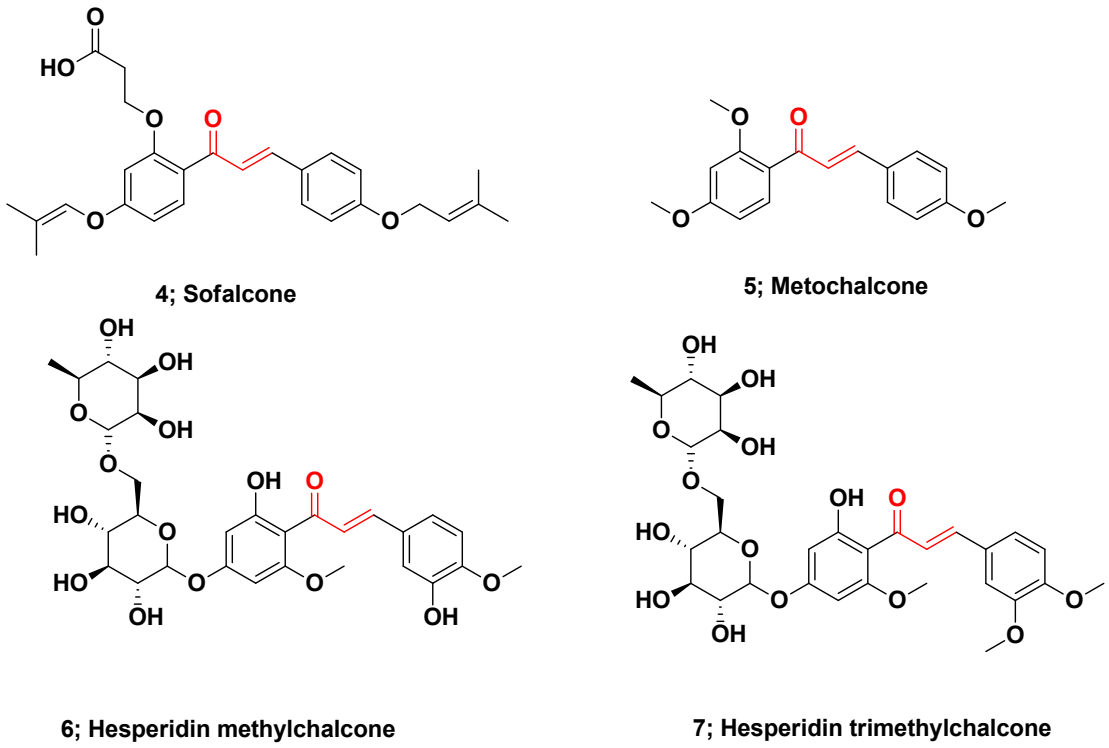


Fig. 2: Chemical structures of approved and clinically tested naturally occurring chalcones.

Table 1: Examples of anticancer chalcones[1]

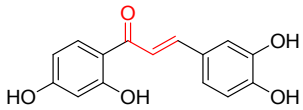
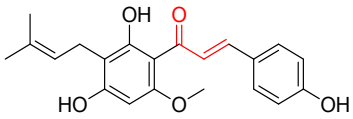
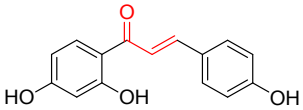
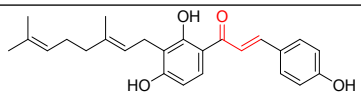
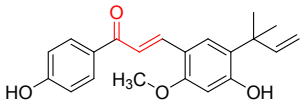
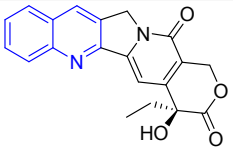
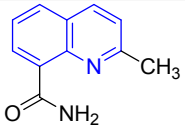
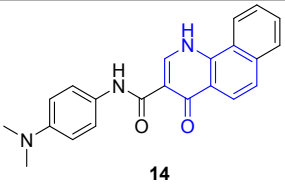
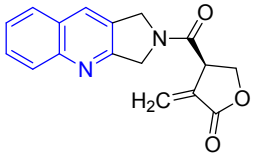
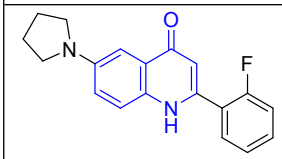
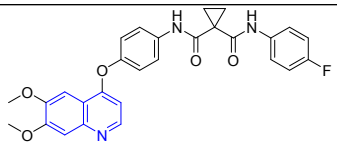
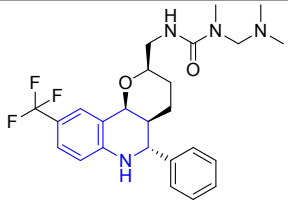
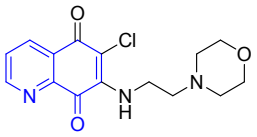
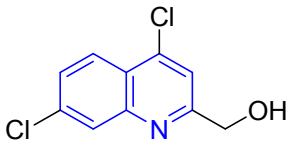
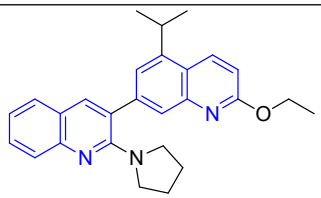
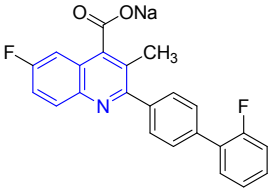
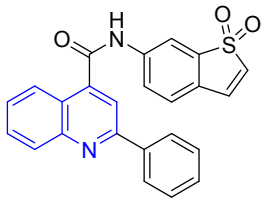
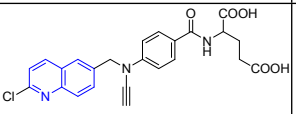
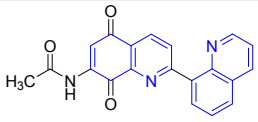
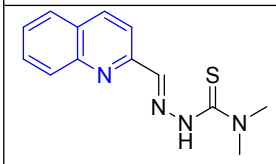
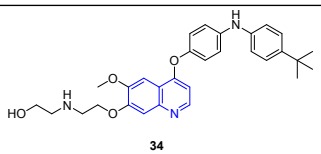
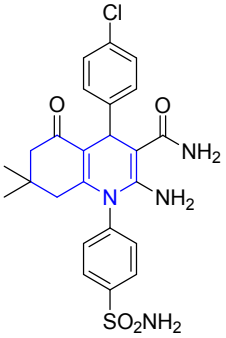
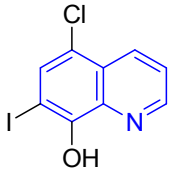
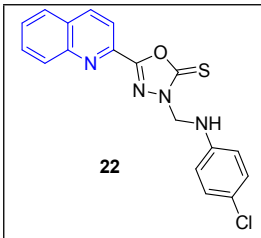
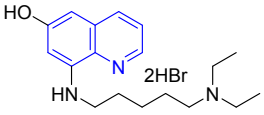
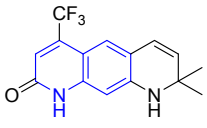
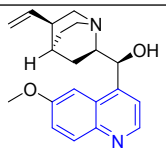
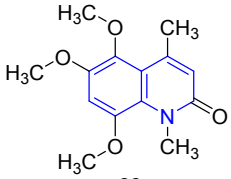
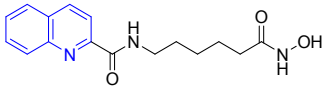
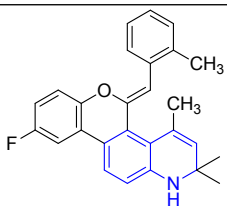
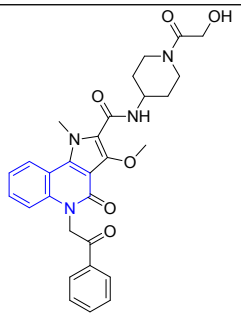
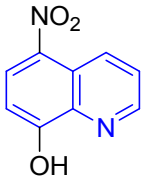
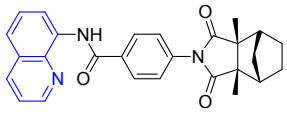
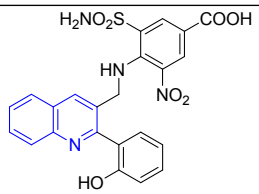
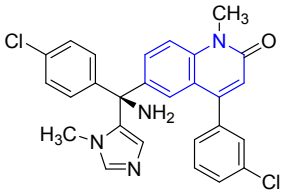
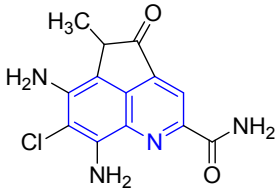
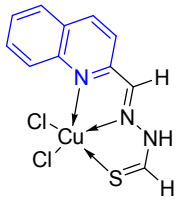
Chalcone derivative	Target	Chalcone derivative	Target
 8; Butein	EGFR, IKKβ, aromatase, HDAC	 11; Xanthohumol	IKKβ, aromatase
 9; Isoliquiritigenin	EGFR	 12; Xanthoangelol	Aurora kinases, EGFR
 10; Licochalcone A	IKKβ		

Table 2: Examples of anticancer quinolines

Compound	Target	Compound	Target
 13, Camptothecin	Topoisomerase I and II inhibitor[2]	 28	Poly(ADP-ribose) polymerase-1 (PARP-1) inhibitors[3]
 14	G-quadruplex-DNA binding affinity[4]	 29; DK8G557	PI3-kinase related kinase (PIKK) and mTOR inhibitors[5]
 15	Anti-mitotic agents and tubulin polymerization inhibitor[6]	 2; Cabozantinib	Protein kinase inhibitor[7]

 **16**	Mitotic kinesin-5 inhibitor[8]	 **30**	Protein phosphatase Cdc25 inhibitors[9]
 **17**	DNA intercalating agent[10]	 **31**	Bcl-2 family protein modulators[11, 12]
 **18; Brequinar sodium**	De novo pyrimidine biosynthesis inhibitor[13-15]	 **32**	STAT3 (signal transducers and activators of transcription 3) inhibitors[16]
 **19**	Thymidylate synthase inhibitor[17]	 **33**	NAD(P)H:quinone oxidoreductase (hNQO1) substrates[18]
 **20**	Iron chelators[19, 20]	 **34**	FGF-R2 autophosphorylation inhibitors[21]
 **21**	Carbonic anhydrase inhibitors[22]	 **35; Clioquinol**	NF-kappa B inhibitor[23-25]

 **22**	Telomerase inhibitors[26]	 **36**	Hsp90 inhibitors[27]
 **23**	Androgen receptor antagonists[28]	 **37; Quinidine**	Histone H4 hyperacetylation inducer[29]
 **39**	Aromatase inhibitor[30]	 **38**	Histone acetyltransferases (HAT) and histone deacetylase (HDAC) inhibitors[31]
 **24**	Progesterone receptor agonists[32]	 **39**	Hedgehog signaling inhibitors[33]
 **25; NQ**	Free-radical regulators and ROS mediated apoptosis[34]	 **40**	Human tankyrases inhibitor[35, 36]
 **26**	Sirtuin inhibitors[37]	 **41; Tipifarnib**	Farnesyltransferase inhibitor (FTI)[38, 39]
 **27; Ammosamide B**	Quinone reductase 2 inhibitor[40]	 **42; FPA-137**	Proteasome inhibitors[41]

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