

Preparation, preliminary pharmacokinetics and brain tissue distribution of Tanshinone IIA and Tetramethylpyrazine composite nanoemulsions

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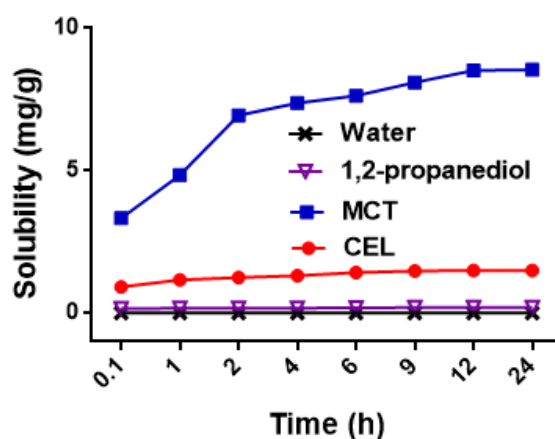


Figure .S1. The solubility of TSN in different solvent.

The solubility of TSN in MCT was 8.76 ± 0.42 mg/g higher than other solvents. And TSN is almost insoluble in water and 1,2-propanediol.

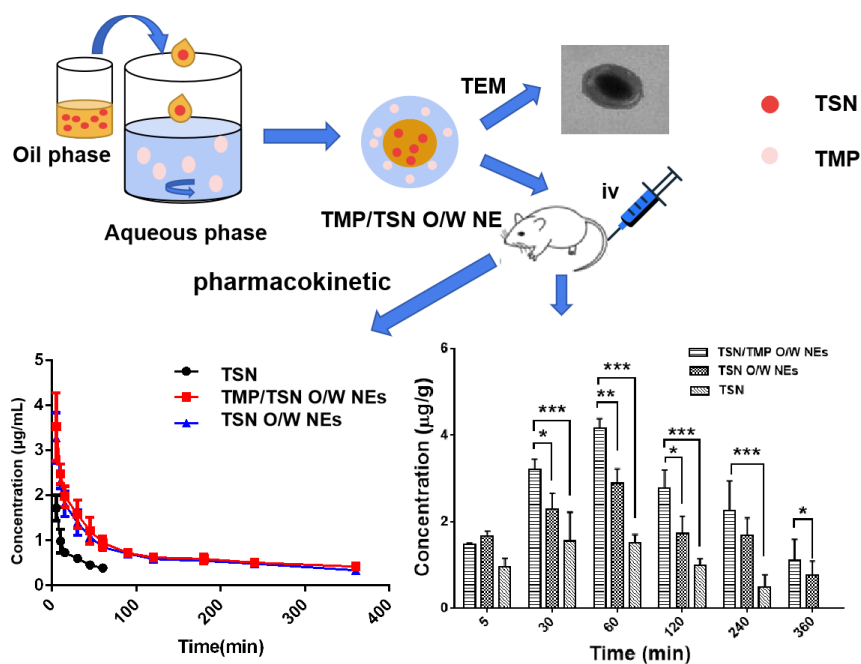
Table .S1 The different percentages of MCT, Km and Water for pseudo-ternary phase diagram of

NEs

	MCT (%)	Km=3:1 (%)	Water (%)
□	8.18	0.91	90.91
□	7.27	1.82	90.91
□	6.36	2.73	90.91
□	30.00	20	50
□	33.33	33.33	33.34
□	26.67	40	33.33
□	16.67	38.89	44.44
□	1.82	7.27	90.91
□	0.91	8.18	90.91

Different percentages of MCT, Km and water as shown in Tab. S1 were designed to form the pseudo-ternary phase diagram.

Graphical abstract



In this work, Tetramethylpyrazine and Tanshinone IIA composite nanoemulsions (TMP/TSN O/W NEs) was prepared with stirring method successfully. The nanoemulsion loaded with TSN and TMP exhibited excellent stability. The pharmacokinetic study demonstrated that TMP/TSN O/W NE improve bioavailability of TSN and enhance distribution in brain compared with raw TSN.