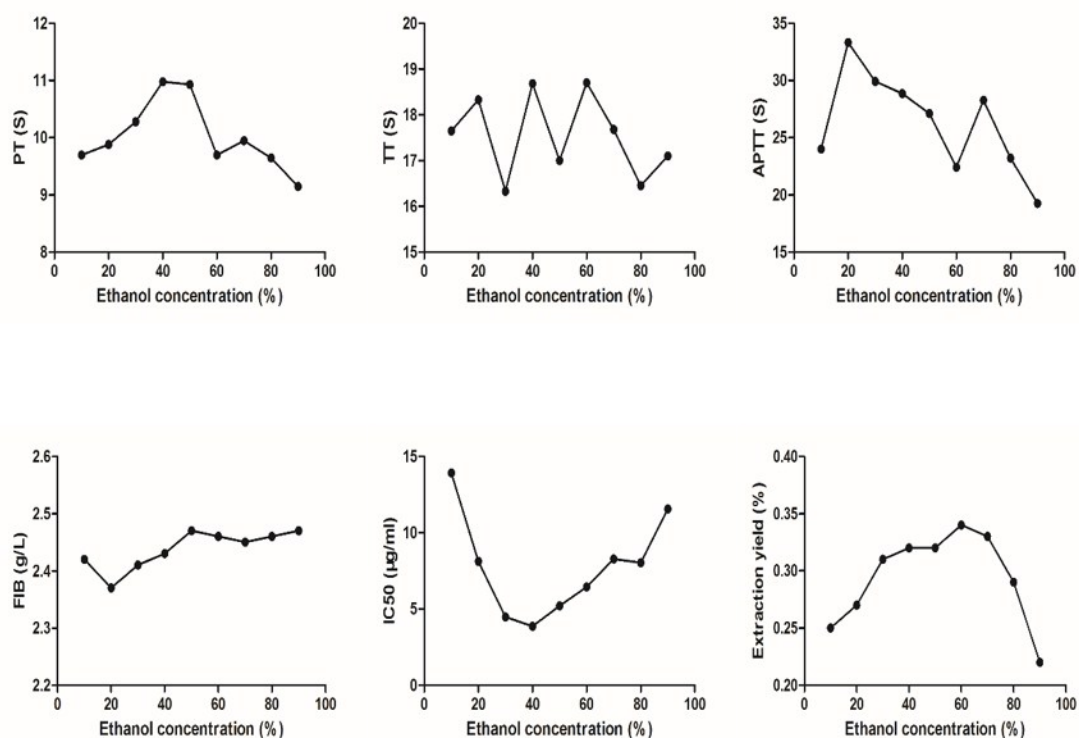
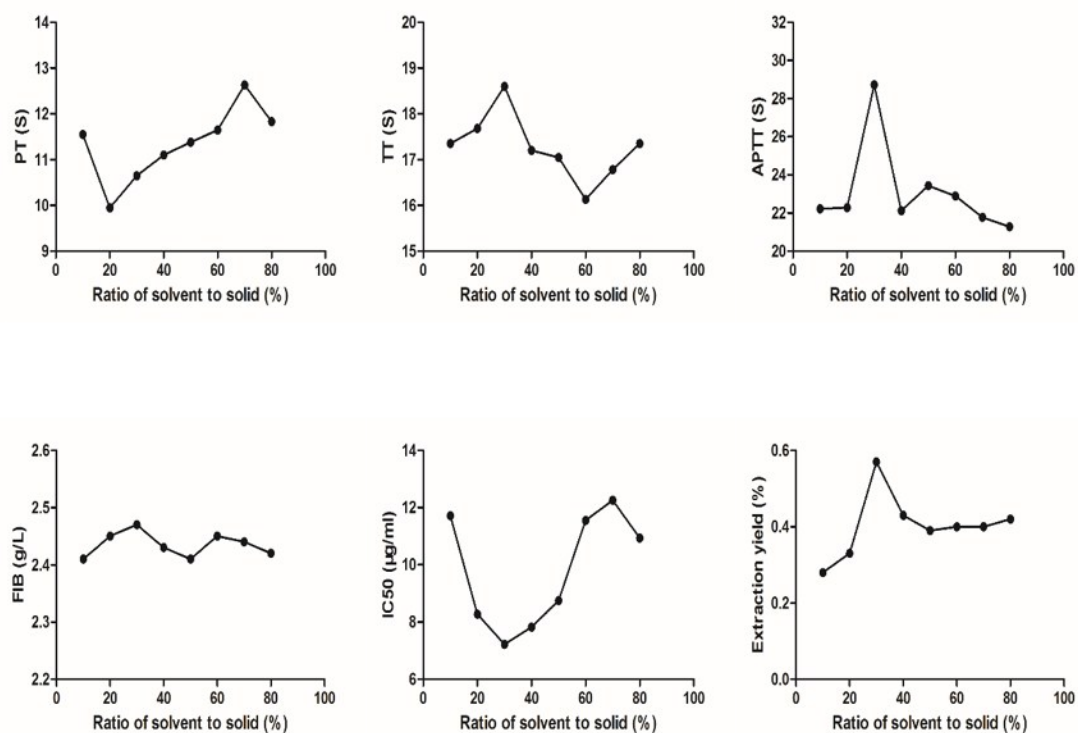


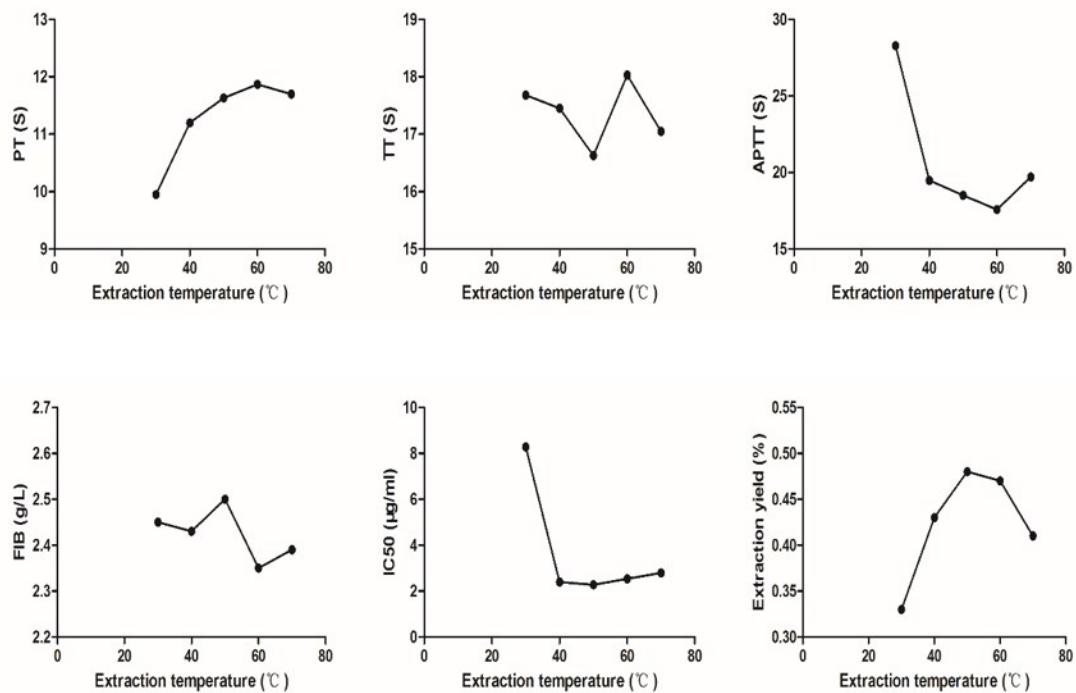
**Fig. S1.** Effects of ethanol concentration on the extraction yield of LJ ( $Y_1$ ), TT ( $Y_2$ ), PT ( $Y_3$ ), APTT ( $Y_4$ ), FIB ( $Y_5$ ) and DPPH free radical scavenging activity ( $Y_6$ ).



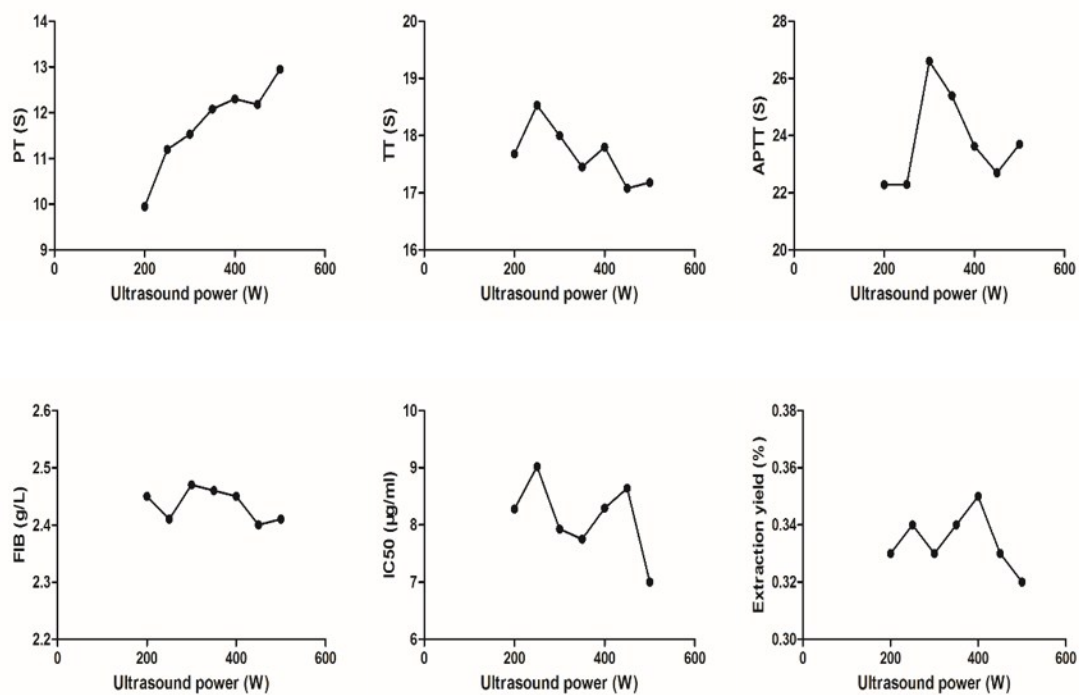
**Fig. S2.** Effects of ratio of solvent to solid on the extraction yield of LJ ( $Y_1$ ), TT ( $Y_2$ ), PT ( $Y_3$ ), APTT ( $Y_4$ ), FIB ( $Y_5$ ) and DPPH free radical scavenging activity ( $Y_6$ ).



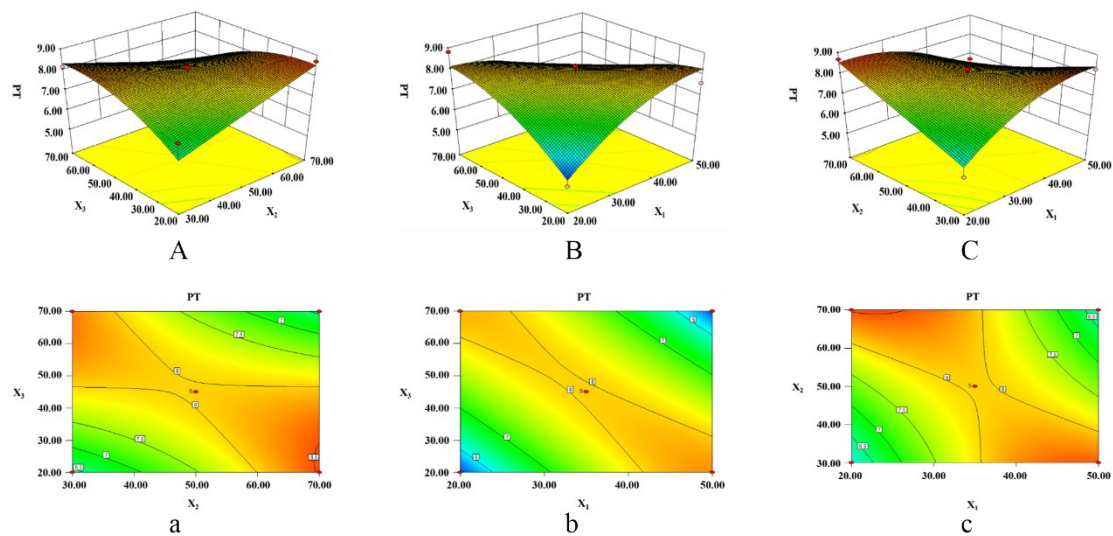
**Fig. S3.** Effects of extraction temperature on the extraction yield of LJ ( $Y_1$ ), TT ( $Y_2$ ), PT ( $Y_3$ ), APTT ( $Y_4$ ), FIB ( $Y_5$ ) and DPPH free radical scavenging activity ( $Y_6$ ).



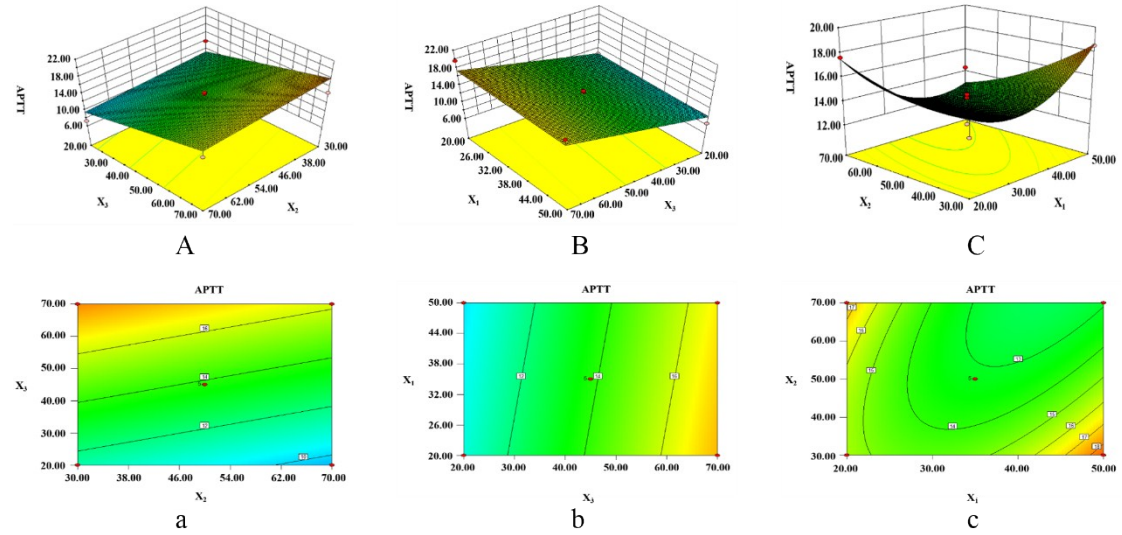
**Fig. S4.** Effects of ultrasonic power on the extraction yield of LJ ( $Y_1$ ), TT ( $Y_2$ ), PT ( $Y_3$ ), APTT ( $Y_4$ ), FIB ( $Y_5$ ) and DPPH free radical scavenging activity ( $Y_6$ ).



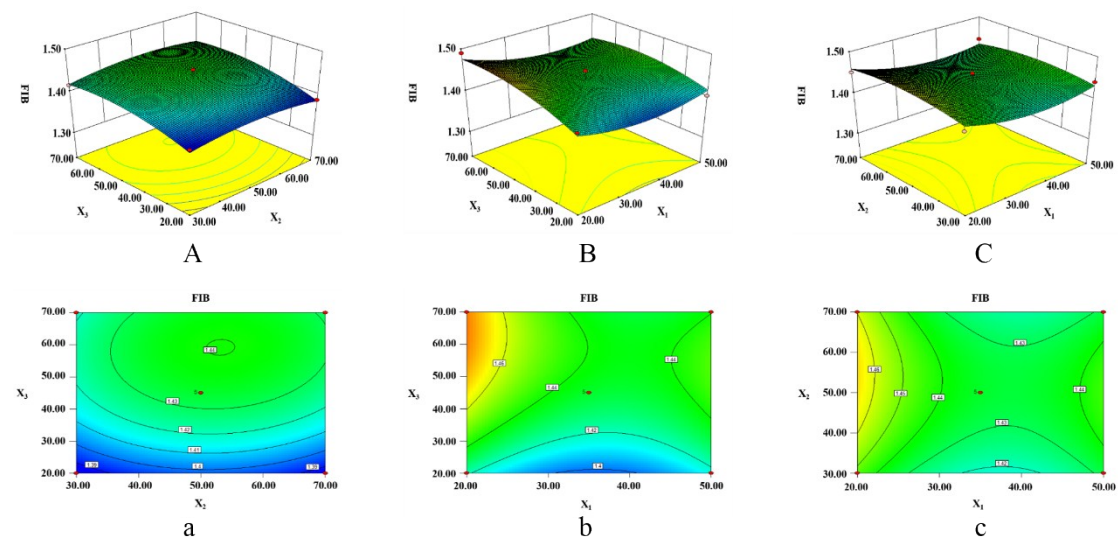
**Fig. S5.** Response surface (3-D) and contour plots showing the effects of (A and a) extraction temperature ( $X_2$ ) and ethanol concentration ( $X_3$ ), (B and b) ultrasonic time ( $X_1$ ) and ethanol concentration ( $X_3$ ) and (C and c) ultrasonic time ( $X_1$ ) and extraction temperature ( $X_2$ ) on PT ( $Y_3$ ).



**Fig. S6.** Response surface (3-D) and contour plots showing the effects of (A and a) extraction temperature ( $X_2$ ) and ethanol concentration ( $X_3$ ), (B and b) ultrasonic time ( $X_1$ ) and ethanol concentration ( $X_3$ ) and (C and c) ultrasonic time ( $X_1$ ) and extraction temperature ( $X_2$ ) on APTT ( $Y_4$ ).



**Fig. S7.** Response surface (3-D) and contour plots showing the effects of (A and a) extraction temperature ( $X_2$ ) and ethanol concentration ( $X_3$ ), (B and b) ultrasonic time ( $X_1$ ) and ethanol concentration ( $X_3$ ) and (C and c) ultrasonic time ( $X_1$ ) and extraction temperature ( $X_2$ ) on FIB ( $Y_5$ ).



**Fig. S8.** Response surface (3-D) and contour plots showing the effects of (A and a) extraction temperature ( $X_2$ ) and ethanol concentration ( $X_3$ ), (B and b) ultrasonic time ( $X_1$ ) and ethanol concentration ( $X_3$ ) and (C and c) ultrasonic time ( $X_1$ ) and extraction temperature ( $X_2$ ) on DPPH ( $Y_6$ ).

