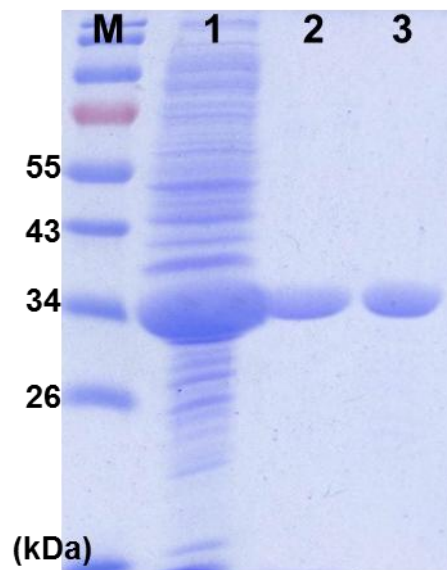


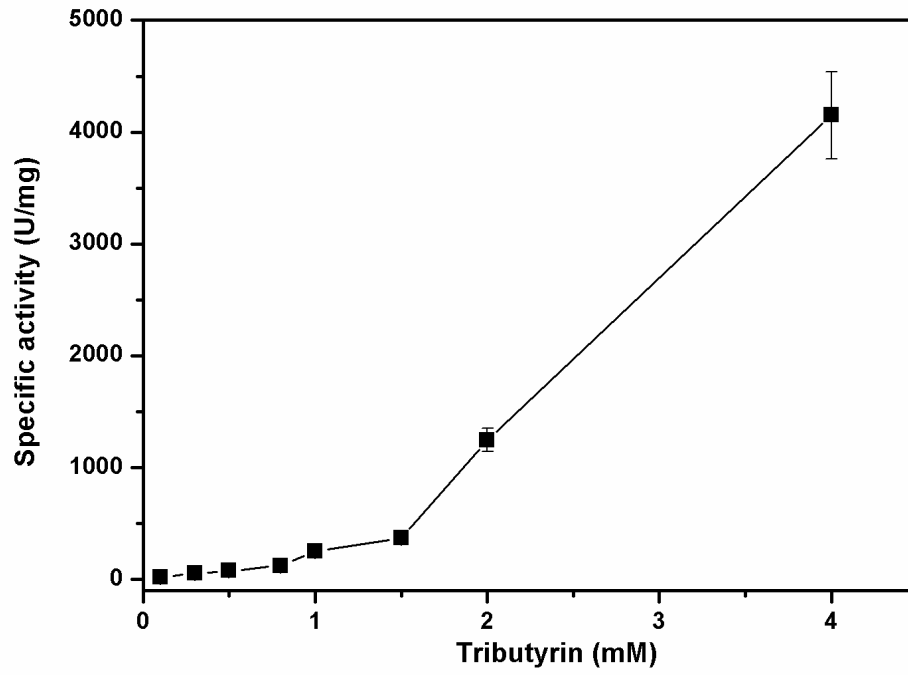
1 **Supplemental figure 1.** SDS-PAGE of MPlaG at purification step. The proteins were
2 analyzed on 12% SDS-PAGE and stained with Coomassie brilliant blue R-250. Lane M,
3 prestained protein ladder, the molecular standard marker (kDa, Fermentas); lane 1,
4 cellular extract of *E. coli* BL21(DE3) harboring pET-MPlaG after IPTG induction; lane
5 2, the eluted protein from the Ni-NTA column chromatography; lane 3, the purified
6 protein after dialysis and concentration.

7



8

1 **Supplemental figure 2.** Interfacial activation of MPlA_G. Activity was determined by
2 pH-stat method at varying concentrations of tributyrin. The large increase in activity
3 was observed at more than 1.5mM of tributyrin.



4

5

1 **Supplemental Table 1.** Effect of metal ions and inhibitors on the MPlaG

2

Compounds	Relative activity (%) ^a		
	at concentration (mM) of		
	1	5	10
CaCl ₂	466	1015	994
CuCl ₂	135	32	11
MgCl ₂	105	198	142
FeSO ₄	137	142	151
ZnCl ₂	107	9	5
NiCl ₂	62	23	7
CoCl ₂	120	177	116
EDTA	78	0	0
PMSF	94	95	47
DTT	93	107	105

3 ^aThe relative activities are given as a percentage of the activity in the absence of cations,
 4 EDTA, PMSF, and DTT.

5

1 **Supplemental Table 2.** Effect of organic solvents on the MPlaG

2

Organic solvents	Relative activity (%) ^a			
	at concentration (% , v/v) of			
	20	30	50	60
DMSO	98	97	98	81
DMF	99	100	93	98
2-propanol	101	97	96	99
Ethanol	100	95	94	98
Methanol	100	101	93	98
Butanol	95	59	48	64
Acetonitrile	100	99	98	99
Acetone	96	100	96	99
Ethylacetate	102	83	60	50

3 ^aThe relative activities are given as a percentage of the activity in the absence of organic
4 solvents.

5

1 **Supplemental Table 3.** Effect of detergents on the MPLaG

2

Compounds	Relative activity (%) ^a at concentration (% v/v) of		
	0.1	1	5
CHAPS	94	92	82
Taurocholate	96	85	72
Deoxycholate	95	88	82
Tween 20	86	29	16
Tween 40	83	56	31
Tween 60	88	69	89
Tween 80	84	66	68
Triton X-100	90	44	22
SDS	94	90	12

3 ^aThe relative activities are given as a percentage of the activity in the absence of
4 detergents.