

Supplementary Data

Supplementary Table 1: Quantitation of Platelet Dense Granule Components.

Component	In granule (mM)	Initial local concentration upon granule release (μM)	In vessel before granule release (μM)
ADP	653 ¹	≈ 1000 ²	0.13 ³
ATP	436 ¹	≈ 1000 ²	2 ³
Ca ²⁺	2181 ¹		2500 ¹
Ap ₃ A	166 ⁴	≥ 100 ⁵	0.89 ⁶
Ap ₄ A	205 ⁴	≥ 100 ⁵	0.72 ⁶
Ap ₅ A	82.0 ⁴		0.33 ⁶
Ap ₆ A	26.7 ⁴		0.18 ⁶
Serotonin	65 ¹		
Pyrophosphate	326 ⁷		

The concentrations of each component were derived based on the assumptions that dense granules have volumes of $6.69 \times 10^{-3} \mu\text{m}^3$ and that there are 7 granules per platelet¹.

References

1. Holmsen H, Weiss HJ. Secretable storage pools in platelets. *Annual review of medicine* 1979; **30**: 119-34.
2. Beigi R, Kobatake E, Aizawa M, Dubyak GR. Detection of local ATP release from activated platelets using cell surface-attached firefly luciferase. *The American journal of physiology* 1999; **276**(1 Pt 1): C267-78.
3. Jabs CM, Ferrell WJ, Robb HJ. Plasma ADP levels: direct determination with luciferase luminescence using a biometer. *Clinical biochemistry* 1978; **11**(5): 190-3.
4. Jankowski J, Potthoff W, van der Giet M, Tepel M, Zidek W, Schluter H. High-performance liquid chromatographic assay of the diadenosine polyphosphates in human platelets. *Anal Biochem* 1999; **269**(1): 72-8.
5. Olgilvie A. *AP4A AND OTHER DINUCLEOTIDE POLYPHOSPHATES*, CRC Press: Boca Raton, 1992.

6. Jankowski J, Jankowski V, Laufer U, van der Giet M, Henning L, Tepel M *et al.* Identification and quantification of diadenosine polyphosphate concentrations in human plasma. *Arteriosclerosis, thrombosis, and vascular biology* 2003; **23**(7): 1231-8.
7. Ruiz FA, Lea CR, Oldfield E, Docampo R. Human platelet dense granules contain polyphosphate and are similar to acidocalcisomes of bacteria and unicellular eukaryotes. *J Biol Chem* 2004; **279**(43): 44250-7.