

Additional file 1. Studies published about relationship between the ornamentation of pollen grains and others characters in angiosperms.

| Taxa | Reference | Data type |
|------------------|--|---|
| Angiosperms | Whitehead [1] | Relation between wind-pollination and smooth pollen grains |
| Polemoniaceae | Taylor and Levin [2] | No apparent association between pollination mechanism and pollen sculpturing |
| Angiosperms | Heslop-Harrison [3] | Relation between exine and pollenkitt |
| Angiosperms | Hesse [4] | Relation between exine sculpturing, pollenkitt and pollination syndromes |
| Papilionoideae | Ferguson and Skvarla [5] | Correlation between pollen morphology and pollination mechanisms |
| Angiosperms | Zavada [6] | Association between exine sculpturing and self-incompatibility mechanisms |
| Araceae | Grayum [7]; Grayum [8] | Correlation between exine ornamentation and pollination type |
| <i>Bauhinia</i> | Ferguson and Pearce [9] | Correlation between exine ornamentation and pollination |
| Angiosperms | Gibbs and Ferguson [10] | No apparent association between exine sculpturing and self-incompatibility mechanisms |
| Cabombaceae | Osborn <i>et al.</i> [11] | Relation between exine sculpturing, pollenkitt and pollination |
| Callitrichaceae | Osborn and Philbrick [12]; Osborn <i>et al.</i> [13] | Correlation between hydrophily and smooth pollen grains |
| Angiosperms | Linder [14] | Relation between smooth pollen ornamentation and wind pollination |
| Angiosperms | Stroo [15] | No association between bat pollinated plants and pollen morphology |
| Hydrocharitaceae | Tanaka <i>et al.</i> [16] | Correlation between pollen morphology and pollination mechanisms |
| Orchidinae | Lumaga <i>et al.</i> [17] | Relation between exine micromorphology and pollination strategies |

1. Whitehead DR: **Wind pollination in the angiosperms; evolutionary and environmental considerations.** *Evolution* 1969, **23**:28-35.
2. Taylor TN, Levin DA: **Pollen morphology of Polemoniaceae in relation to systematics and pollination systems: scanning electron microscopy.** *Grana* 1975, **15**:91-112.

3. Heslop-Harrison J: **The adaptative significance of the exine.** In: *The evolutionary significance of the exine.* Edited by Ferguson IK, Muller M. London: Academic press; 1976: 27-37.
4. Hesse M: **The fine structure of the exine in relation to the stickiness of angiosperm pollen.** *Review of Palaeobotany and Palynology* 1981, **35**:81-92.
5. Ferguson IK, Skvarla JJ: **Pollen morphology in relation to pollinators in Papilionoideae (Leguminosae).** *Botanical Journal of the Linnean Society* 1982, **84**:183-193.
6. Zavada MS: **The relation between pollen exine sculpturing and self-incompatibility mechanisms.** *Plant Systematics and Evolution* 1984, **147**:63-78.
7. Grayum MH: **Correlations between pollination biology and pollen morphology in the Araceae, with some implications for angiosperm evolution.** In: *Pollen and Spores: form and function.* Edited by Blackmore S, Ferguson IK. NY London: Academic Press; 1986: 313-327.
8. Grayum MH: **Comparative external pollen ultrastructure of the Araceae and putatively related taxa.** *Monographs in Systematic Botany of the Missouri Botanical Garden* 1992, **43**:1-167.
9. Ferguson IK, Pearce KJ: **Observation on the pollen morphology of the genus *Bauchinia L.* (Leguminosae: Caesalpinioideae) in the neotropics.** In: *Pollen and spores: form and function.* vol. 12. London, UK: Academic Press, ; 1986: 283-296.
10. Gibbs PE, Ferguson IK: **Correlations between pollen exine sculpturing and angiosperm self-incompatibility systems - a reply.** *Plant Systematics and Evolution* 1987, **157**:143-159.
11. Osborn JM, Taylor TN, Schneider EL: **Pollen morphology and ultrastructure of the Cabombaceae: correlations with pollination biology.** *American Journal of Botany* 1991, **78**(10):1367-1378.
12. Osborn JM, Philbrick CT: **Comparative pollen structure and pollination biology in the *Callitrichaceae.*** *Acta botanica Gallica* 1994, **141**(2):257-266.

13. Osborn JM, El-Ghazaly G, Cooper RL: **Development of the exineless pollen wall in *Callitriche truncata* (Callitrichaceae) and the evolution of underwater pollination.** *Plant Systematics and Evolution* 2001, **228**:81-87.
14. Linder HP: **Pollen morphology and wind pollination in Angiosperms.** In: *Pollen and Spores: Morphology and Biology*. Edited by Harley MM, Morton CM, Blackmore S. Kew: Royal Botanic Gardens; 2000: 73-88.
15. Stroh A: **Pollen morphological evolution in bat pollinated plants.** *Plant Systematics and Evolution* 2000, **222**:225-242.
16. Tanaka N, Uehara K, Murata J: **Correlation between pollen morphology and pollination mechanisms in the Hydrocharitaceae.** *Journal of Plant Research* 2004, **117**:265-276.
17. Lumaga MR, Cozzolino S, Kocyan A: **Exine Micromorphology of Orchidinae (Orchidoideae, Orchidaceae): Phylogenetic Constraints or Ecological Influences?** *Annals of Botany* 2006, **98**:237-244.