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# Pattern formation of stains from dried drops to identify spermatozoa motility

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## Abstract

We study how cell motility affects the stains left by the evaporation of droplets of a biofluid suspension containing mouse spermatozoa. The suspension, which contains also a high concentration of salts usually needed by motile cells, forms, upon drying, a crystallized pattern. We examine the structural characteristics of such patterns by optical microscopy. The analysis reveals that cell motility affects the formation of elongated crystals with lateral tips, as well as the creation of interlocked aggregates. We prove that a lacunarity algorithm based on polar symmetry, distinguishes among deposits generated by motile and non-motile cells with an accuracy greater than 95%.

*Keywords:* Droplets; Pattern Formation; Motility.

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## Statistical summary

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