

TABLE 1 Swimming characteristics of various species of *Archaea*

Species	Shape (size [ $\mu\text{m}$ ])	Optimal growth temp ( $^{\circ}\text{C}$ ) <sup>a</sup>	Avg velocity ( $\mu\text{m/s}$ ) <sup>b</sup>	Maximal velocity ( $\mu\text{m/s}$ )	Zigzag movement observed	Velocity in zigzag movement ( $\mu\text{m/s}$ ) <sup>c</sup>	Temp range of swimming ( $^{\circ}\text{C}$ )	Mode of swimming and/or remarks
<i>Escherichia coli</i>	Rod (2 by 0.7)	37	45 $\pm$ 5.0	66	–		20–60	Smooth curves and smooth lines, interrupted by tumbles
<i>Halobacterium salinarum</i>	Rod (10 by 1)	50	3 $\pm$ 0.5	10	–		20–65	Slow smooth lines; swimming speed markedly dependent on temp
<i>Methanococcus voltae</i>	Coccus (2)	37	80 $\pm$ 8.5	128	+	ND	20–55	Rapid and long notched tracks; shearing has no big influence on swimming capacity
<i>Methanococcus maripaludis</i>	Coccus (1.5)	37	25 $\pm$ 3.4	45	+	<10	20–60	Short, notched tracks; extremely sensitive to shearing
<i>Methanocaldococcus jannaschii</i>	Coccus (1.5)	85	380 $\pm$ 40	589	+	50–100	20–90	Extremely fast, directional swimming or slower zigzag movement; very slow swimming at room temp
<i>Methanocaldococcus villosus</i>	Coccus (1)	80	287 $\pm$ 36	468	+	80–120	50–90	Very fast directional swimming or slower zigzag movement
<i>Pyrococcus furiosus</i>	Coccus (2.5)	100	62 $\pm$ 7.0	110	+	30–50	70–95	Swimming markedly dependent on temp; directional swimming and slower zigzag movement
<i>Sulfolobus acidocaldarius</i>	Coccus (1.5)	70	45 $\pm$ 4.2	60	–		30–80	Swimming speed markedly dependent on temp; notched tracks with zigzag elements

<sup>a</sup> The data given for average velocity and maximal velocity were determined for this temperature.

<sup>b</sup> The values represent the mean of at least 50 independent swimming tracks from at least 10 cells measured in five independent experiments (see Materials and Methods). The given standard deviation is derived from tracks that differed by not more than 10% from each other. Also included in the standard deviation values are experimental setup-related error sources, like the tracking of diving cells, or problems with program calibration.

<sup>c</sup> ND, not determined.