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Paul E Gunnells* (gunnells@math.umass.edu), Dept. of Math. and Stat., University of Massachusetts Amherst, Amherst, MA 01003. *Automata and affine Kazhdan–Lusztig cells.*

Let (W, S) be an affine Weyl group, and let $C \subset W$ be a Kazhdan–Lusztig cell (left, right, or two-sided). Let $R(C)$ be the set of all reduced expressions of elements of C in the generators S , regarded as a language over the alphabet S in the sense of formal language theory. Our main result is that $R(C)$ is a regular language. This implies, for instance, that one can tell if a reduced expression represents an element of C simply by checking if the expression contains a subword from a finite list depending on C . (Received March 19, 2010)