The $q$-Brownian motion is a certain non–commutative random process whose distributions are the $q$-Gaussian distributions, and for which the Rogers $q$-Hermite polynomials are martingale polynomials. Bożejko, Kümmerer, and Speicher showed that it is a (non–stationary) Markov process, and computed its transition functions. In this talk, I will compute the generators of these transition functions. The proof involves $q$-stochastic calculus, but the question is a purely special functions question, and so it would be interesting to have a purely special functions proof. (Received September 08, 2012)