For a finite relational structure $A$, let $\text{CSP}(A)$ denote the CSP instances whose constraint relations are taken from $A$. We consider $\text{CSP}(A)$ from the perspective of property testing: given an instance of $\text{CSP}(A)$ and query access to an assignment, one wants to decide whether the assignment satisfies the instance, or is far from doing so. We establish a dichotomy theorem completely characterizing the structures $A$ such that $\text{CSP}(A)$ is constant-query testable: (i) If $A$ has a majority polymorphism and a Maltsev polymorphism, then $\text{CSP}(A)$ is constant-query testable with one-sided error. (ii) Else, testing $\text{CSP}(A)$ requires a super-constant number of queries. This is joint work with Hubie Chen and Yuichi Yoshida. (Received January 12, 2017)