A simple test for monoalphabetic substitution

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      Vigenere :   PQJLLAJBSXZ
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$$p_{AA} + p_{BB} + p_{CC} + \cdots + p_{ZZ} \approx .027$$

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While in polyalphabetic cyphertext we should observe:

$$P(\alpha\alpha \text{ occurrs in random cyphertext }) = \frac{1}{26} \approx .038$$

We should note (of course) that this only works for reasonably large amounts of text.