

Bayes Factors in BayesVarSel

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The simplest, g fixed

g -prior of Zellner (1986)

$$BF_{i0} = (1+n)^{\frac{n-k_0-k_i}{2}} (1+nQ_{i0})^{-\frac{n-k_0}{2}}$$

```
double gBF21fun(int n, int k2, int k0, double Q)
{
// k2 size of the full model
// k0 size of the null model
// Q is Qi0
    double BF21=0.0;
    double lBF21=0.0;
    lBF21 = ((n-k2)/2.0)*log(1.0+n)-((n-k0)/2.0)*log(1.0+n*Q);
    BF21 = exp(lBF21);
    if (!R_FINITE(BF21)){error("A Bayes factor is infinite.");}
    return BF21;
}
```