SCR.bf = function(modelsin, refmodel=NULL){

 require(mvtnorm)

 nmodels = length(modelsin)

 model.lik <- rep(NA, nmodels)

 n.nolik <- list()

 LLsamples <-LLs<- matrix(nrow=nrow(modelsin[[1]]$likelihood),ncol=nmodels)

 LLsamples <- sapply(modelsin,"[[",'likelihood')[1:nrow(modelsin[[1]]$likelihood),]

 maxLL <- max(LLsamples)

 LLprime <- LLsamples-maxLL

 for (i in 1:nmodels){

 model = modelsin[[i]]

 model.post = model$mcmchist[,model$parms2report]

 model.post = model.post[,colnames(model.post)!="sigma"&colnames(model.post)!="sigma2" &colnames(model.post)!="D"&colnames(model.post)!="lam0"]

 post.avg = apply(model.post,2,mean)

 post.var = var(model.post)

 emp.dens = apply(model.post,2,density)

 emp.dens = lapply(emp.dens,function(x){

 prob<-x$y/sum(x$y)

 return(cbind(x=x$x,prob))})

 chain.dens = matrix(NA, nrow=nrow(model.post), ncol=ncol(model.post))

 for (c in 1:ncol(model.post)){

 chain.dens[,c]=emp.dens[[c]][,2][findInterval(model.post[,c],emp.dens[[c]][,1])]

 }

 f.samples = dmvt(model.post,delta=post.avg, sigma=cov2cor(post.var), df=nrow(model.post),log=T)

 model.lik[i] = (1/nrow(model.post)\*sum(exp(f.samples-(LLprime[,i]+log(apply(chain.dens,1,prod))))))^(-1)

 n.nolik[[i]] <- c("sum"=sum(model$likelihood[,2]), "mean"=mean(model$likelihood[,2]), "median"=median(model$likelihood[,2]), min = min(model$likelihood[,2]), "max"=max(model$likelihood[,2]))

# maxL[i] = max(model$likelihood)

# avgL[i] = mean(model$likelihood)

# medL[i] = median(model$likelihood)

 }

 post.prob =(model.lik)/sum((model.lik))

 names(model.lik) <- names(modelsin)

 n.nolik.df = do.call("rbind", n.nolik)

 if(!is.null(refmodel)){

 bf = model.lik/model.lik[refmodel]

 Jeff.breaks = c(1,3,10,30,100)

 Jeff.evid = c("Supports Null", "Barely worth mentioning", "Substantial","Strong","Very Strong","Decisive")

 KR.breaks = c(1,3,20,150)

 KR.evid = c("Supports Null","Barely worth mentioning", "Positive","Strong","Very Strong")

 out.table = data.frame("Model" = names(modelsin), "Post.Prob" = post.prob, "BayesFactor"=bf, "log10BF" = log10(bf), "Two\*lnBF" = 2\*log(bf), "JeffreysEvidence" = Jeff.evid[findInterval(bf, Jeff.breaks)+1],"KRevidence" = KR.evid[findInterval(bf, KR.breaks)+1])

 out.table$JeffreysEvidence = factor(out.table$JeffreysEvidence,levels = c(levels(out.table$JeffreysEvidence),"Null Model"))

 out.table$KRevidence = factor(out.table$KRevidence,levels = c(levels(out.table$KRevidence),"Null Model"))

 out.table[refmodel,c("JeffreysEvidence","KRevidence")]="Null Model"

 rownames(out.table)=NULL

 out = list("ModelSelection"=out.table, "LowLikelihoodObservations"=n.nolik.df)

 return(out)

 } else {

 out.table = data.frame("Model" = names(modelsin), "Post.Prob" = post.prob)

 rownames(out.table)=NULL

 out = list("ModelSelection"=out.table, "LowLikelihoodObservations"=n.nolik.df)

 return (out)

 }

}