The synthesis of new therapeutics is an important endeavor for addressing medical need in our society. Quinazolinone, a heterocyclic chemical compound with versatile binding properties, has been discovered to harbor many beneficial biological activities such as anti-inflammatory, antiviral, anticarcinogen, and antibacterial properties in medicinal chemistry. As such, establishing effective and reliable syntheses of substituted quinazolinones is an important goal for studying their medicinal potential. In order to explore this, we performed multiple experiments targeting the *N*-alkylation of quinazolinones using dibromoalkane reagents with different carbon linker lengths and later performed additional substitution reactions to attach amine groups to the *N*-alkylated quinazolinones. The *N*-alkylations were successful with longer carbon linked reagents; however, reactions with reagents containing shorter carbon linkers formed various byproducts instead of the desired *N*-alkylated quinazolinones. Subsequent reactions of the *N*-alkylated quinazolinones with differently hindered alkyl amines produced complex mixtures of products. Together, our findings indicate that longer carbon linker length in dibromoalkane reagents increases the success of quinazolinone *N*-alkylation, but more research with different reaction conditions such as temperature, electrophile strength, base identity, or solvent identity is required to access the target *N*3-alkylamino quinazolinones.