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1 **Synthesis and cardio protective biological applications of**  
2 **glucodendrimers by H9C2 cell studies**

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9 **ABSTRACT**

10 Novel glucodendrimers scaffolds containing  $\alpha$ -D-glucopyranoside at the surface and triazole as  
11 bridging unit have been synthesized. Cardiomyocytes were exposed to normal and high glucose level in  
12 the presence and absence of glucodendrimers. Cytotoxicity studies were also carried out and the  
13 expression of metalloproteinases mainly MMP-2 and 9 was confirmed with gelatine zymography and  
14 RT-PCR gene expression studies. Cardio protective efficiency of the synthesized glucodendrimers  
15 against high glucose induced toxicity on metalloproteinase-2 and 9 and also on H9C2 cell lines revealed  
16 that higher generation glucodendrimers **6** and **8** are more effective than the lower generation  
17 glucodendrimers.

18 **KEYWORDS:** Glucodendrimer, click chemistry, Diabetic mellitus, Matrix metalloproteinases, H9C2  
19 cardiomyocytes

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