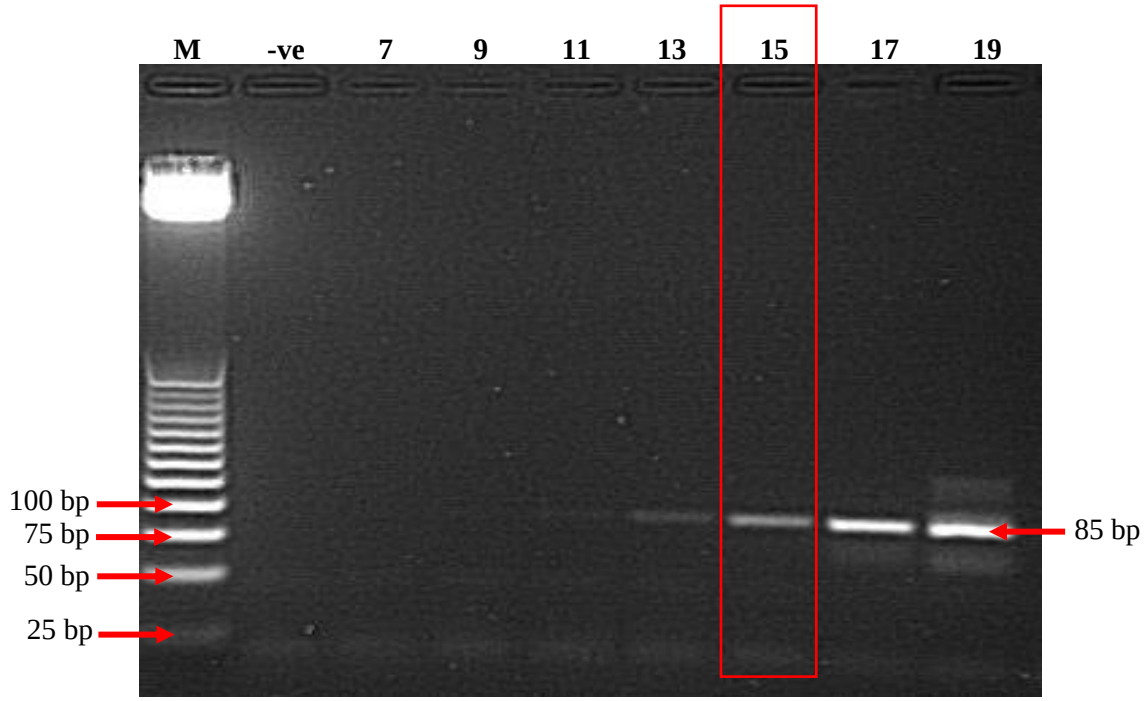

Figure S1 Profile of 2.5% (w/v) agarose gel electrophoresis for PCR cycle optimization of amplified bound DNA to rhICAM-1. The gel was stained with Diamond Nucleic Acid Stain.

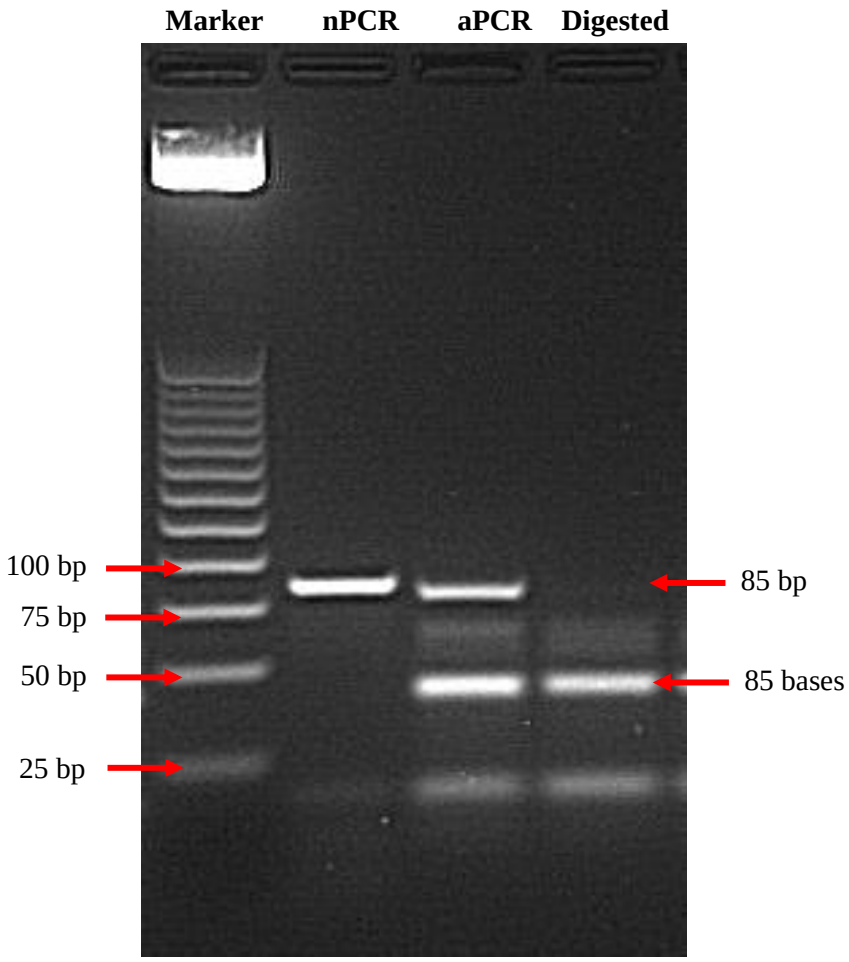

Figure S2 Profile of 2.5 % (w/v) agarose gel electrophoresis of amplified normal PCR (nPCR: dsDNA), asymmetric PCR (aPCR: dsDNA and ssDNA) and lambda exonuclease digested product (Digested: ssDNA). The gel was stained with Diamond Nucleic Acid Stain.

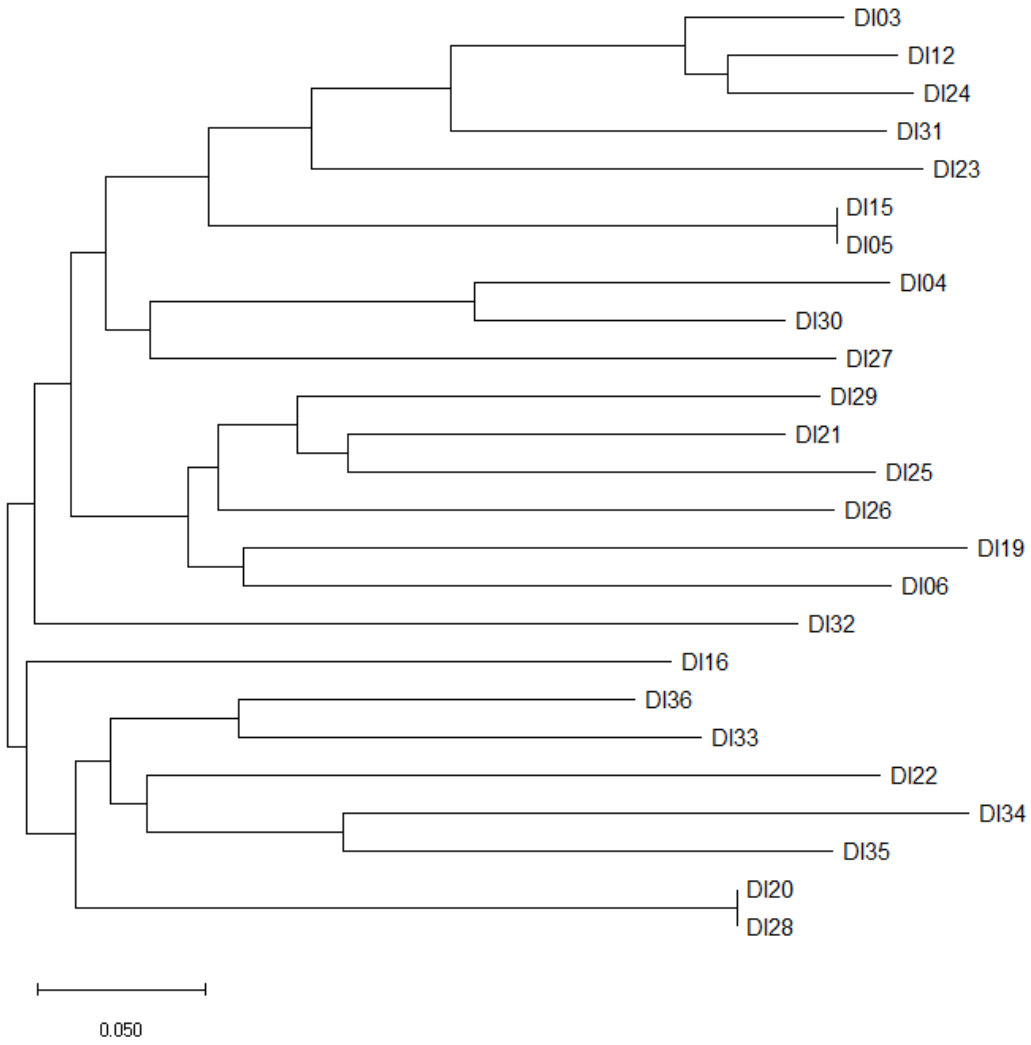

Figure S3 Phylogeny analysis of isolated DNA aptamer clusters targeted rhICAM-1 protein.

The analysis was constructed using the Neighbour-Joining tree provided by MEGA 6 software. The DNA aptamers were clustered based on sequence similarity using ClustaW Multiple Alignment software.

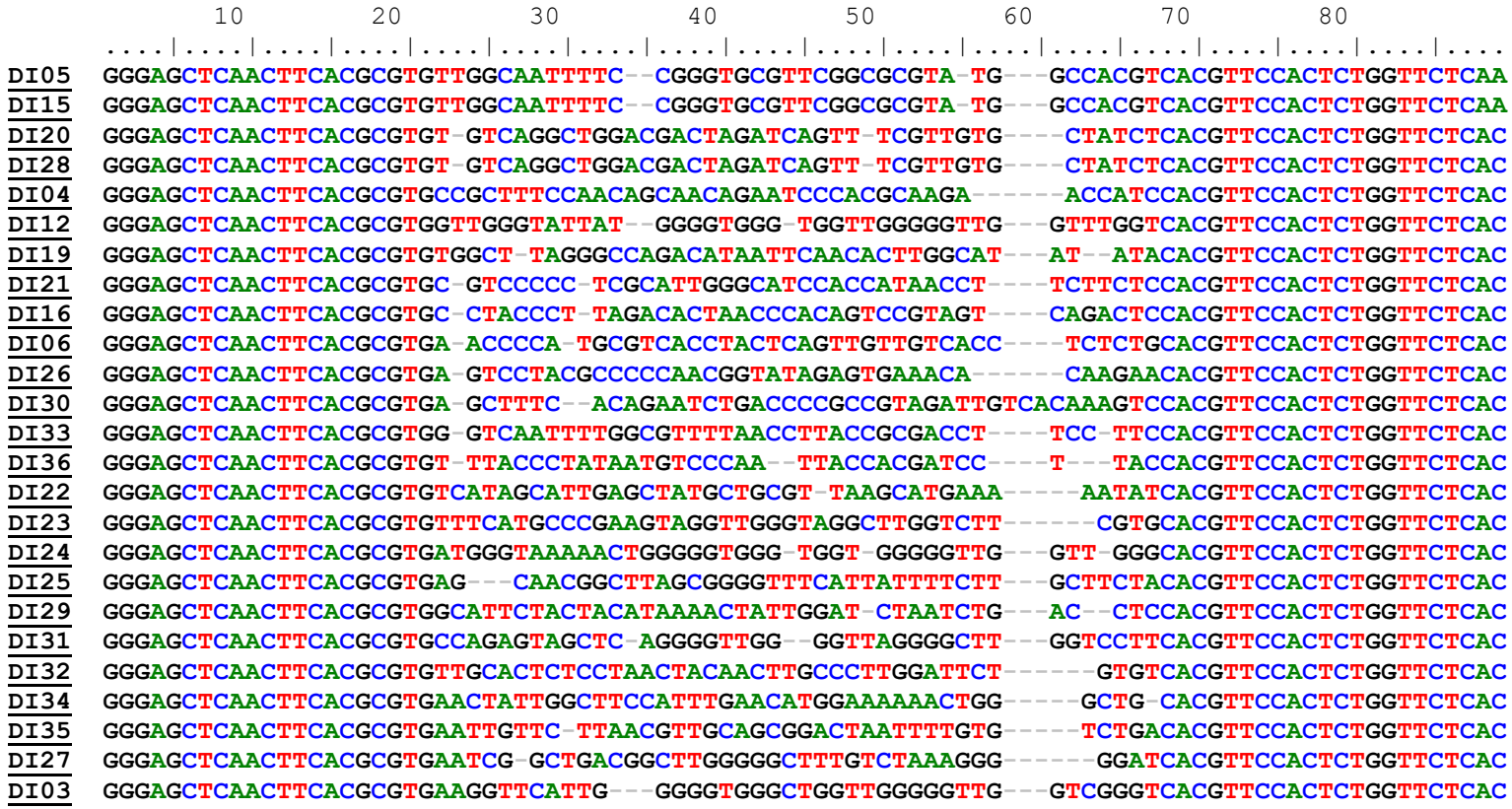

Figure S4 The sequence alignment of 25 random sequences of isolated DNA aptamer targeted the rhICAM-1 protein.

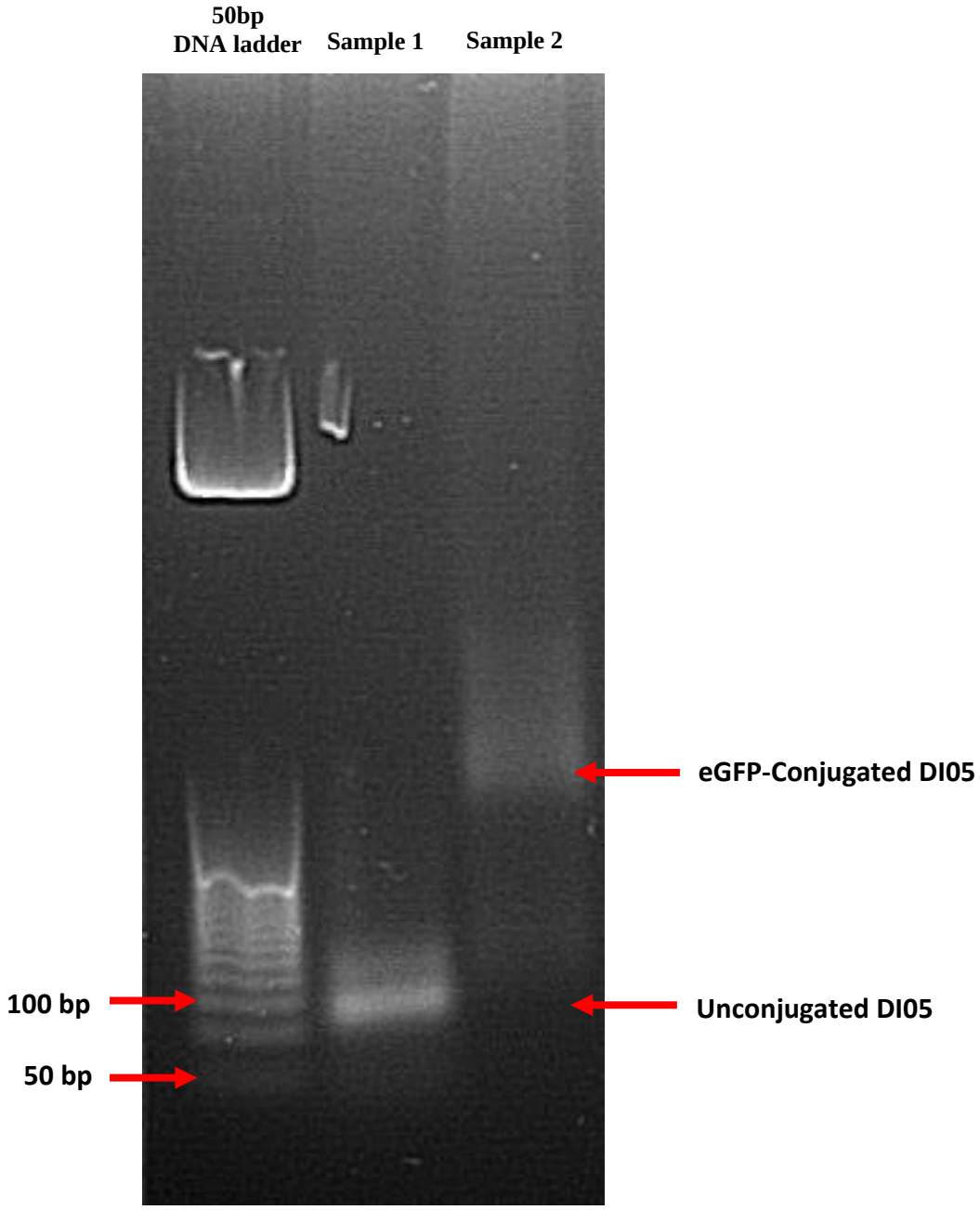

Figure S5 Profile 2% (w/v) agarose gel electrophoresis of the unconjugated and conjugated product of DI05. The gel was stained with 1X Diamond Nucleic Acid Satin. The length of unconjugated DI05 is 85 bases (with a molecular weight of approximately 5 kDa). The successful conjugation of DI05 to eGFP was proved by a shift of a higher band compared to unconjugated DI05. Legend: Sample 1 (Unconjugated DI05) and Sample 2 (eGFP-conjugated DI05).

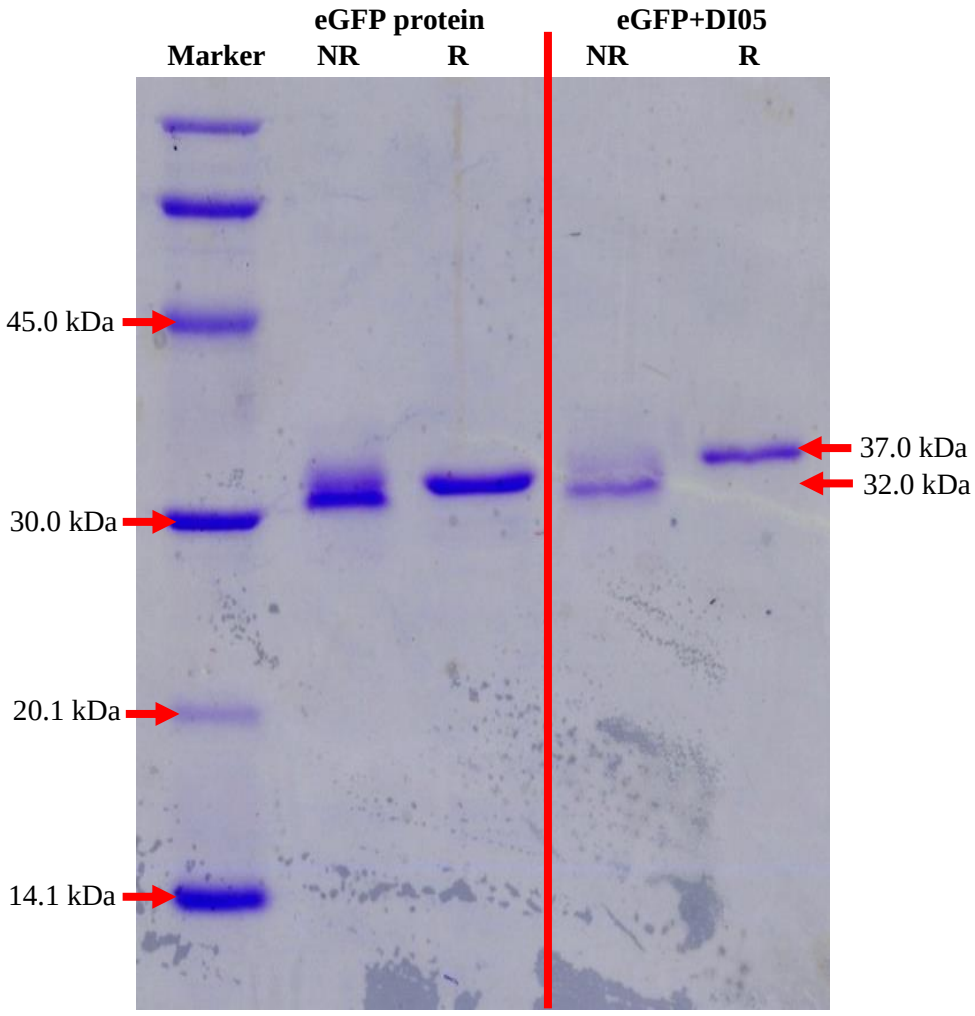

Figure S6 Profile 12% (v/v) SDS-PAGE of conjugated and conjugated eGFP under reducing (R) and non-reducing (NR) conditions. The gel was run at 140 volts for 30 minutes, followed by Coomassie Blue staining. The molecular weight of eGFP protein and DI05 were estimated at approximately 32.0 kDa and 5 kDa, respectively. The molecular weight of eGFP-DI05 conjugated was estimated at around 35 kDa.