

Appendix A

Figure A.1	Chemical structure of methyl 3-chlorothiophene-2-carboxylate (1)	121
Table A.1	Crystal data and structure refinement for 1	122
Table A.2	Atomic coordinates and equivalent isotropic displacement parameters for 1	124
Table A.3	Bond lengths [Å] and angles [°] for 1	124
Table A.4	Anisotropic displacement parameters for 1	125
Table A.5	Hydrogen coordinates and isotropic displacement parameters for 1	125
Figure A.2	ORTEP representation of methyl 3-chlorothiophene-2-carboxylate.....	126
Figure A.3	Crystal packing and van der Waal's contacts for methyl 3-chlorothiophene-2-carboxylate.....	127

Appendix B

Figure B.1	Overview of Polyamides Studied on pJWP12 and pJWP11 and plasmid sequences of pJWP12 and pJWP11.....	131
Figure B.2	Quantitative DNase I footprint of a linear β -linked polyamide targeting GAA repeats.....	132
Figure B.3	Quantitative DNase I footprints for two linear β -linked polyamides, one containing a $\beta \rightarrow Gly$ point mutation and the other containing a $\beta \rightarrow Py$ point mutation.....	133
Figure B.4	Quantitative DNase I footprint of a hairpin polyamide targeting GAA repeats.....	134
Figure B.5	Quantitative DNase I footprint of two Cy3-labeled, linear β -linked polyamides targeting GAA repeats.....	135
Figure B.6	A Chlorambucil-labeled GAA-targeting β -linked polyamide alkylates $(GAA)_{33}$ repeat sequences.....	136
Table B.1	Summary data from Figures B.2–B.5.....	137
Table B.2	MALDI-TOF Mass Spectral Data for Polyamides 1–7	137

Appendix C

Figure C.1	Polyamides utilized to study the effects of dye placement on CSI microarray determined binding preferences.....	141
Figure C.2	CSI Intensity Histogram for polyamide 3	143
Figure C.3	CSI Fractional Standard Deviation Histogram for polyamide 3	143
Figure C.4	Plasmids utilized to footprint polyamides 1 and 3	144
Figure C.5	Quantitative DNase I footprint titrations of polyamides 1 and 3 on plasmids pJWP16 and pJWP18.....	145
Table C.1	Quantitative DNase I Footprinting Derived K_a values (M^{-1}) for Polyamides 1 and 2	146
Figure C.6	CSI array intensities correlate well with DNase I footprinting-determined K_a values.....	146
Figure C.7	Cy3-labeled polyamide 3 and unlabeled polyamide 1 correlate well.....	147
Figure C.8	Scatter Plot Correlation of End-labeled Cy3-polyamide 2 with Internally-labeled Cy3-polyamide 3	147
Figure C.9	Sequence logo for polyamide 3	148
Table C.2	Microarray-Derived Binding Affinities and Specificities of All Single Base Pair Mismatch Sites for Polyamide 3	149
Table C.3	Microarray-Derived Binding Affinities and Specificities of All Single Base Pair Mismatch Sites for Polyamide 3 Using 5'-AARAARWWG-3' as the Preferred Motif.....	150