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[illegible] Propylthiouracil with Human and Bovine Serum Albumins

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Abstract

[illegible]

Keywords: [illegible]

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[illegible]

[illegible] causes of hyperthyroidism in areas with Iodine abundance [illegible] Propylthiouracil (6-propyl-2-thiouracil) (PTU) its chemical structure provided in Figure 1 [illegible]

Serum Albumin

[illegible]

[illegible] Human Serum Albumin (HSA), its secondary structure presented in the top part of Figure 2 [illegible]

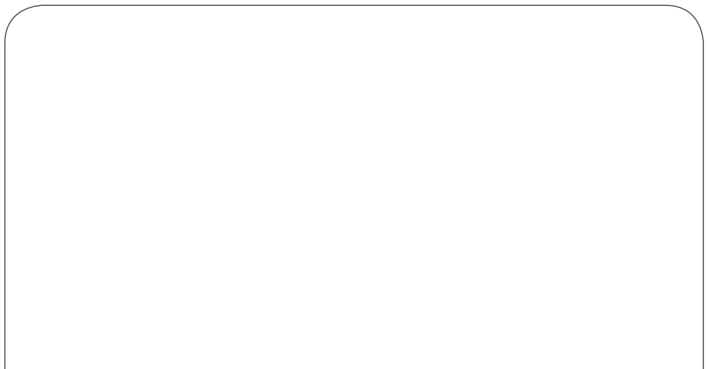
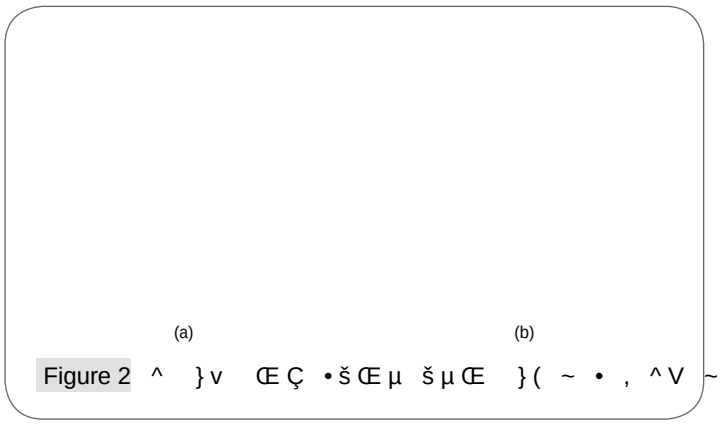


Figure 1



(a) (b)

Figure 2

Instruments

in 1975, BSA contains the 607 amino acid residue, twenty-one of which is tyrosine (Tyr) residues and two of which are tryptophan

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íìì ^‰ šŒ}‰Z}š}u š Œ (}Œ šZ (Œ ,^ l ^ ~ìXò uD• v (}Œ šZ ,^ l ^ rWdh }u‰o Æ • Z•}oµŸ}v• Á]šZ šZ (}oo}Á]vP }v všŒ Ÿ}v• ~ìXñU ìXóU ìXõU íXí v íXï• uDX hs u •µŒ u vš• Á Œ Œ ‰ š (}Œ oo šZ • u‰o • Œ vv}••]Pv] Á Œ } • ŒÀ X dZ hsr •}Œ‰Ÿ}v •‰ šŒ (}Œ }šZ }u‰o Æ • ,^ rWdh v ^ rWdh Œ } š]v š šZ Á À o vPšZ }(îôì vuX

Fluorescence

&oµ}Œ • v š Á Œ } š]v Ç E v} Œ}‰ E rïïìì &oµ}Œ}r •‰ šŒ}‰Z}š}u š Œ (}Œ šZ (}oo}Á]vP }u‰o Æ • }v všŒ Ÿ}v ~ìXñU ìXóU ìXõU íXí v íXï• uD š îñ£ X dZ Æ]š Ÿ}v •}µŒ }u • (Œ}u }v }(šZŒ •}o] r•š š >]PZš u]«vP]} • ~> •• ÁZ] Z Z À }‰Ÿ}v• šZ š]v oµ W hs > Á]šZ u Æ]uµu Æ]š Ÿ}v ïòñ vuU oµ > Á]šZ Æ]š Ÿ}v ðóì vuU v ÁZ]š > (Œ}u ñìì š} òñì vu Æ]š Ÿ}vX îìðôr o u vš ŒŒ Ç š š}Œ }À Œ]vP ðììróñì vuU]• }vv š Ç v }‰Ÿ o . Œ š} šZ }‰Ÿ o u •µŒ u vš •µŒ(X dZ Æ]š Ÿ}v]• }v (}Œ }šZ }u‰o Æ • ,^ rWdh v ^ rWdh š šZ Á À o vPšZ }(ïõì vu v šZ u Æ]uµu u]••]}v Á À o vPšZ]• š ððì vuX

Results and Discussions

hsrs/^ •}Œ‰Ÿ}v •‰ šŒ

Ultraviolet and visible spectrometers have been used for many Ç Œ• v Z À }u }v }(šZ]u‰}Œš vš v oÇŸ o]v•šŒµu vš•]v u} Œv o }Œ š}Œ] • µ• }( ]š• •]u‰o]]šÇU À Œ• Ÿo]šÇU •‰ U µŒ ÇU v }•šr + ŸÀ v •• €ïò•X dZ]• Æ‰ Œ]u vš o š Zv]‹µ Á • µ• š} o µo š šZ]v]vP }v•š vš• (}Œ • À Œ o ŒµPr‰Œ}š]v }u‰o Æ • €ïó•X dZ hs •}Œ‰Ÿ}v •‰ šŒ }(,^ rWdh v ^ rWdh }u‰o Æ • Á Œ } š]v Figure 3 ‰Œ • vš Figure 3X dZ .PµŒ •Z}Á• u Æ]uµu •}Œ‰Ÿ}v ‰ l š }(îôì vuU šZ •‰ šŒµu• ‰Œ}À]]Œ š Œ o]v(}Œu Ÿ}v }v šZ]v Œ •]v ‰ l]vš v•]šÇ }(šZ ,^ rWdh ~ }©}u• }u‰o Æ • v šZ }v všŒ Ÿ}v }(šZ Wdh X dZ]v Œ •]v šZ]vš v•]šÇ]• µ š} šZ]vš Œ Ÿ}v • šÁ v ,^ l ^ v Wdh • u}v]š}Œ]v µ+ Œ •}oµŸ}v Ç • vv]vP šZ Á À o vPšZ•X •]v] š]v šZ .PµŒ U šZ Œ]• o Œ •}Œ‰Ÿ}v •]Pv o (}Œ (Œ WdhX

&Œ}u ‹X ñU šZ Œ]‰Œ} o ‰o}š }(í l>• as presented in Figure 4X tZ v .Æ }v všŒ Ÿ}v }(,^ }Œ ^ Á • oo}Á š} }u‰o Æ Á]šZ]+ Œ vš u}µvš• }(WdhU šZ Œ]• o]v Œ]v Œ •]v šZ hs •}Œ v }(,^ }Œ ^ X dZ]v]vP }v•š vš• (}Œ šZ ,^ rWdh v ^ rWdh }u‰o Æ • Á Œ o µo š µ•]vP hs •‰ šŒ }Œ]vP š} ‰µ o]•Z u šZ} • €îîUïô• Á]šZ šZ ••µu‰Ÿ}v šZ š šZ Œ]• }v rš}r}v]vš Œ Ÿ}v šÁ v ,^ l ^ v Wdh]v ‹µ }µ• •}oµŸ}v š} •š o]•Z Z u] o ‹µ]o] Œ]µu •]v šZ (}oo}Á]vP ‹µ Ÿ}v•X

$$HSA+PTU \leftrightarrow HSA:DA \quad (1)$$

$$BSA+PTU \leftrightarrow BSA:DA \quad (2)$$

dZ }ŒŒ •‰}v]vP (}Œu Ÿ}vl]v]vP }v•š vš• Œ P]À v ÇW

< A €,^ W Wdh•l€Wdh• €,^ •

< A € ^ W Wdh•l€Wdh• € ^ •

Figure 3 hs •}Œ‰Ÿ}v •‰ šŒ }(,^ rWdh ~ š}]v v‰µŸ }(,^ ~ }©}u•U Á]šZ u Æ]uµu •}Œ š îñ£ X &Œ }u‰o Æ Á]šZ Wdh]v (Œ ,^ Á]šZ]v Œ •]vP Œ Ÿ}v• }(Wdh• ìXñU ìXóU ìXõU íXí v íXï• uD Wdh Œ •‰ Ÿ}v ‰‰ Œ • v šZ ,^ l ^ rWdh }u‰o Æ • ~ ^ •‰ šŒ

Figure 4 ( ) The plot of $\frac{1}{(A-A_0)}$ for free HSA and free BSA Á]šZ]+ Œ vš ,^ l ^ rWdh }u‰o Æ }Œ]vP o ÇU šZ hs •}Œ v •‰ šŒ Á }µ o Œ]vP]‰Œ} o ‰o}š• • }v šZ (}oo

$$\frac{1}{A-A_0}=\frac{1}{A_\infty - A_0}+\frac{1}{k(A-A_0)}\times\frac{1}{L} \quad (5)$$

A_o ... A_∞ ...

... to the slope found from Figure 4. ... M^{-1} and $K_{BSA-PTU}$ ... and 10^3 M^{-1} ... were constantly repeated and similar results were obtained ...

Fluorescence emission spectroscopy

... tool because it allows nonintrusive measurements of substances ... the amino acids tryptophan, tyrosine and phenylalanine are ...

... Figure 5. ...

$$\frac{F_0}{F} = 1 + K_{sv}[L] = 1 + k_q\tau_0[L] \quad (5)$$

where F_0 and F ... M^{-1} is the Stern- ... F_0/F ... Figure 5 ... at about 10^8 ...

As seen in Figure 6 ...

Figure 5 Fluorescence emission spectra of HSA-PTU (top) and ...

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Figure 6 [illegible]

Figure 7 [illegible]

[illegible]

$$\frac{1}{F_0-F}=\frac{1}{F_0K(L)}+\frac{1}{F_0} \quad (6)$$

[illegible] $\left(\frac{1}{F_0-F}\right)$ [illegible] $\left(\frac{1}{L}\right)$ as shown in Figure 7. [illegible] $\frac{1}{F_0K}$ and intercept $\frac{1}{F_0}$ [illegible]

[illegible] M^{-1} [illegible] M^{-1} [illegible]

[illegible]

Conclusion

[illegible] M^{-1} for both [illegible] which [illegible] is very important to understand the various types of molecular [illegible]

Acknowledgment

[illegible]

Swain M, Swain T, Mohanty BK (2005) Autoimmune thyroid disorders-

Burch HB, Burman KD, Cooper DS (2012) A 2011 survey of clinical

in vitro

in vivo

Alsamamra H, Khalifa Kh, Darwish S, Abuteir M (2018) Analysis of