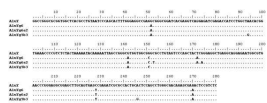
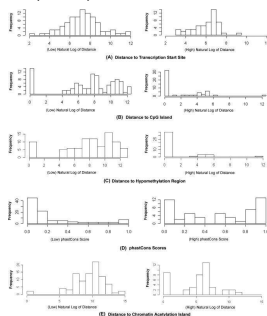


A New Pivoting and Iterative Text Detection Algorithm for Biomedical Images: Appendix D

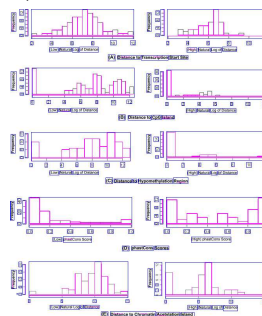
In Figures 1–8, we show some more example text detection results by our algorithm along with the original image.



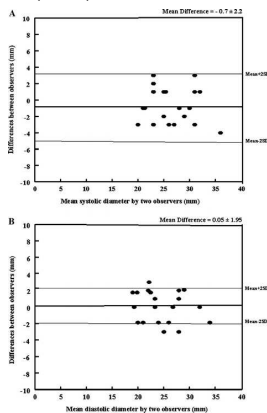
(A-I) raw image



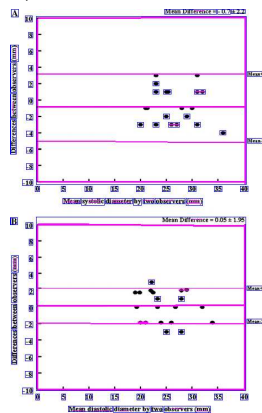
(A-II) text detection result



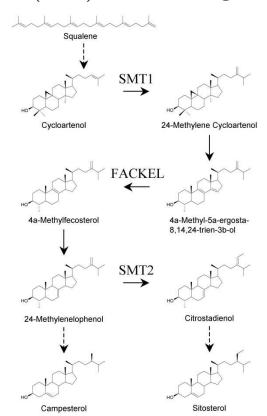
(B-I) raw image



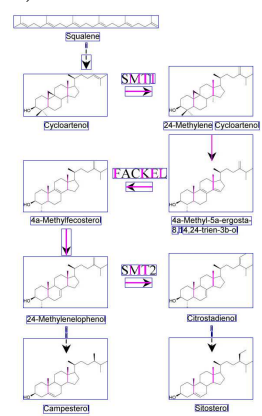
(B-II) text detection result



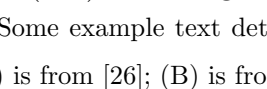
(C-I) raw image



(C-II) text detection result



(D-I) raw image



(D-II) text detection result

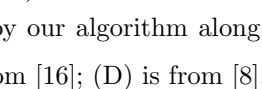
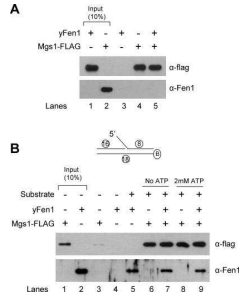
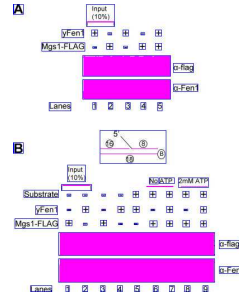


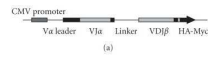
Figure 1: Some example text detection results by our algorithm along with the original image. (A) is from [26]; (B) is from [3]; (C) is from [16]; (D) is from [8].



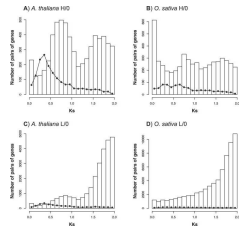
(A-I) raw image



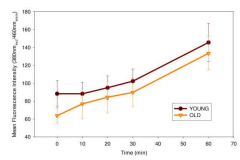
(A-II) text detection result



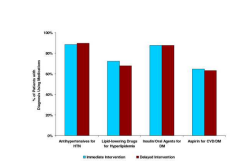
(B-I) raw image



(C-I) raw image

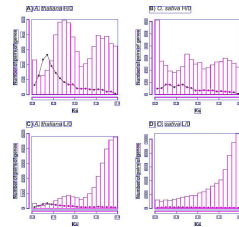


(D-I) raw image

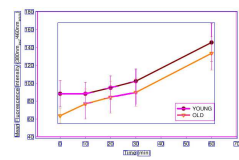


(E-I) raw image

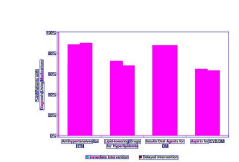
(B-II) text detection result



(C-II) text detection result

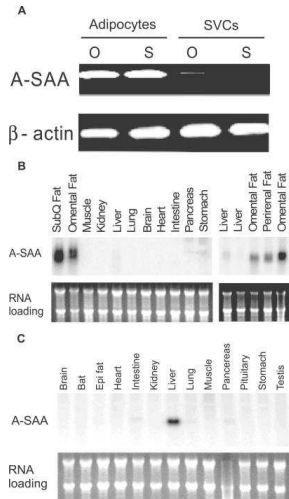


(D-II) text detection result

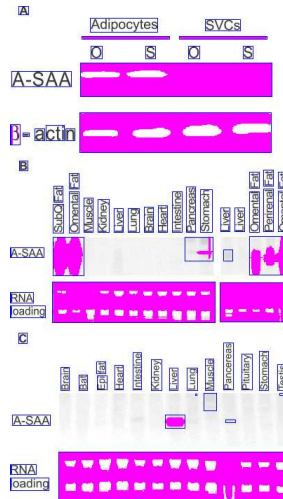


(E-II) text detection result

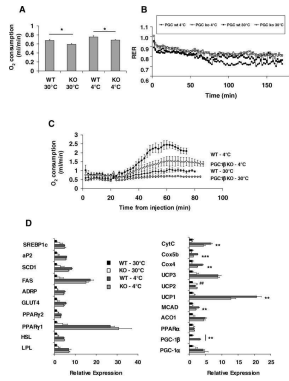
Figure 2: Some example text detection results by our algorithm along with the original image. (A) is from [13]; (B) is from [1]; (C) is from [23]; (D) is from [21]; (E) is from [15].



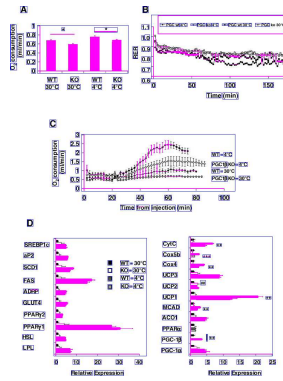
(A-I) raw image



(A-II) text detection result

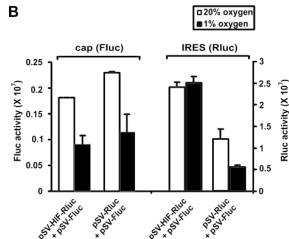
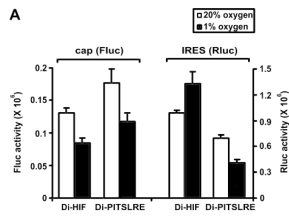


(B-I) raw image

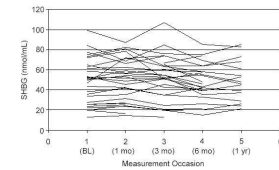


(B-II) text detection result

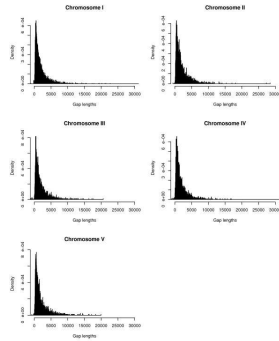
Figure 3: Some example text detection results by our algorithm along with the original image. (A) is from [32]; (B) is from [14].



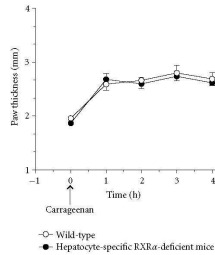
(A-I) raw image



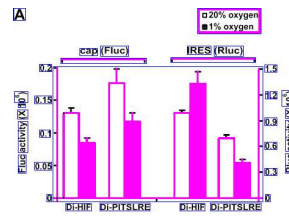
(B-I) raw image



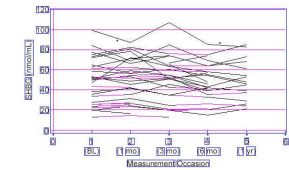
(C-I) raw image



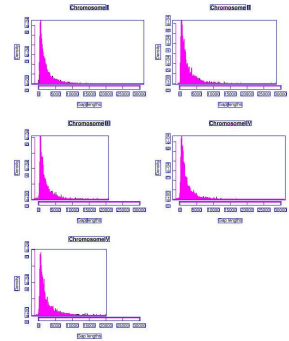
(D-I) raw image



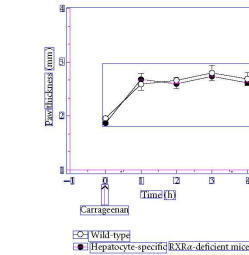
(A-II) text detection result



(B-II) text detection result

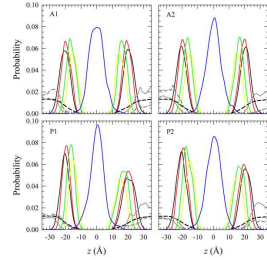


(C-II) text detection result

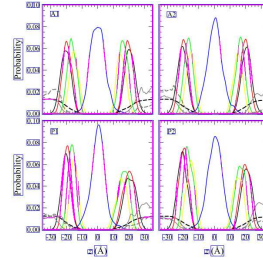


(D-II) text detection result

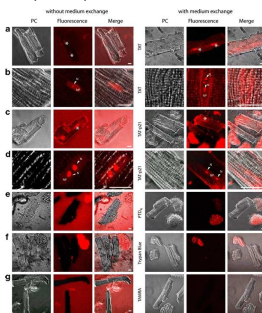
Figure 4: Some example text detection results by our algorithm along with the original image. (A) is from [24]; (B) is from [30]; (C) is from [22]; (D) is from [29].



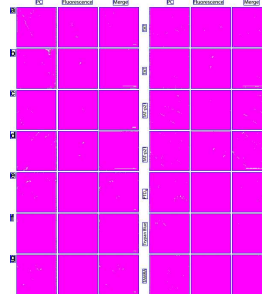
(A-I) raw image



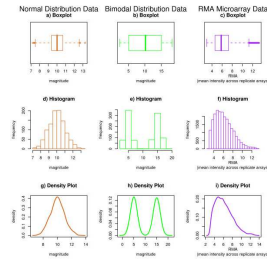
(A-II) text detection result



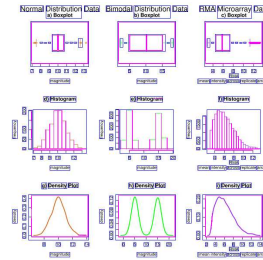
(B-I) raw image



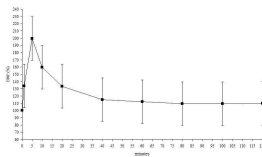
(B-II) text detection result



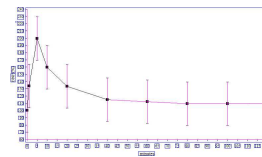
(C-I) raw image



(C-II) text detection result

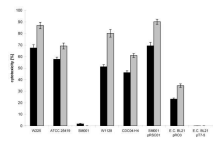


(D-I) raw image

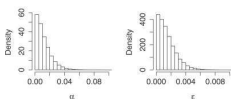
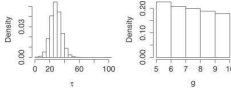


(D-II) text detection result

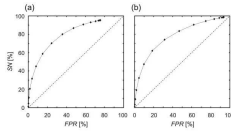
Figure 5: Some example text detection results by our algorithm along with the original image. (A) is from [10]; (B) is from [28]; (C) is from [31]; (D) is from [2].



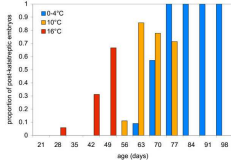
(A-I) raw image



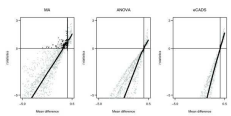
(B-I) raw image



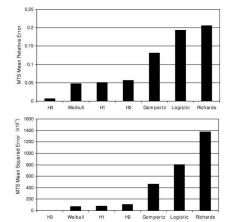
(C-I) raw image



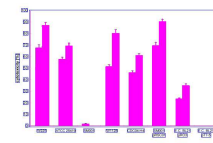
(D-I) raw image



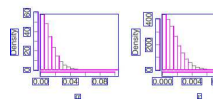
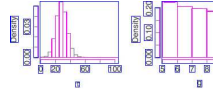
(E-I) raw image



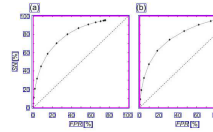
(F-I) raw image



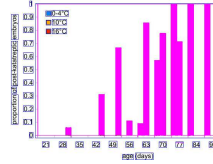
(A-II) text detection result



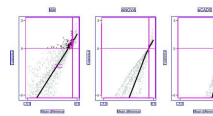
(B-II) text detection result



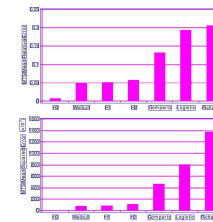
(C-II) text detection result



(D-II) text detection result

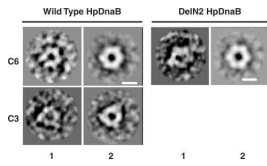


(E-II) text detection result

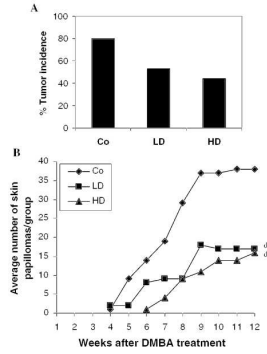


(F-II) text detection result

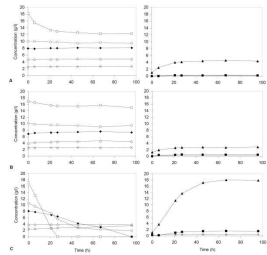
Figure 6: Some example text detection results by our algorithm along with the original image. (A) is from [7]; (B) is from [17]; (C) is from [6]; (D) is from [25]; (E) is from [4]; (F) is from [27].



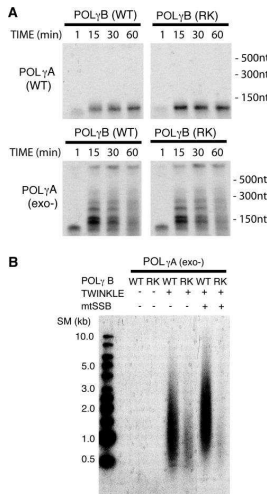
(A-I) raw image



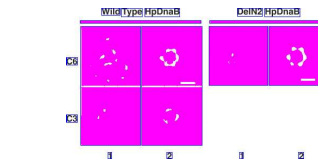
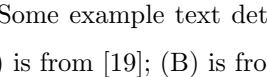
(B-I) raw image



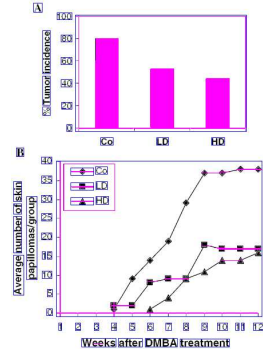
(C-I) raw image



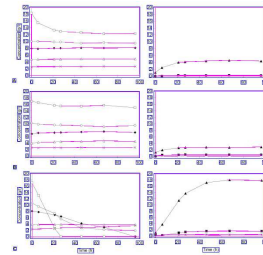
(D-I) raw image



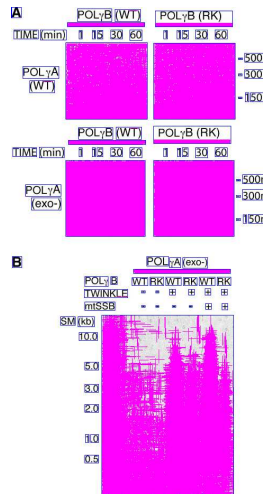
(A-II) text detection result



(B-II) text detection result

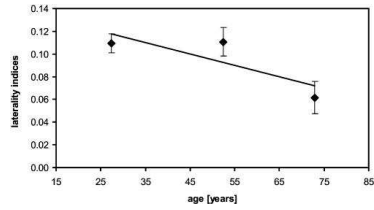


(C-II) text detection result

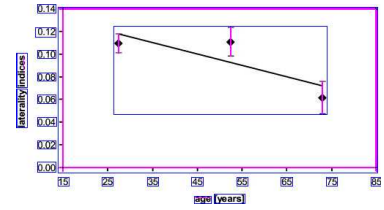


(D-II) text detection result

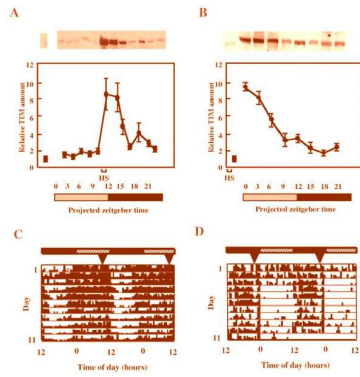
Figure 7: Some example text detection results by our algorithm along with the original image. (A) is from [19]; (B) is from [20]; (C) is from [12]; (D) is from [5].



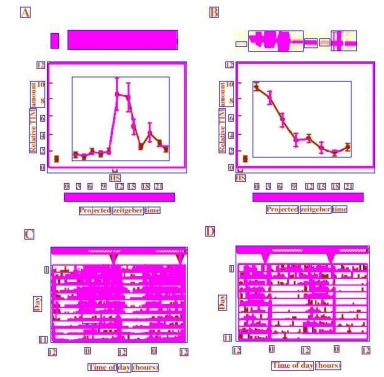
(A-I) raw image



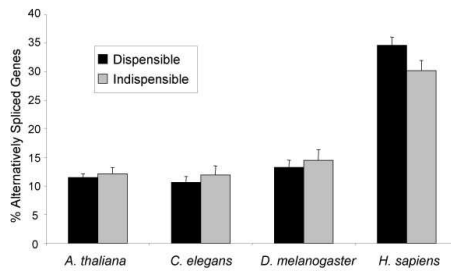
(A-II) text detection result



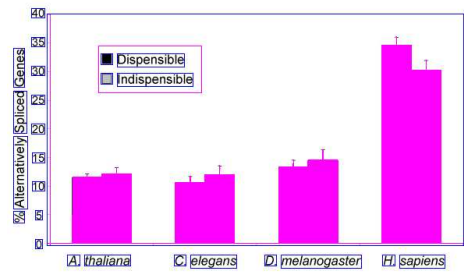
(B-I) raw image



(B-II) text detection result



(C-I) raw image



(C-II) text detection result

Figure 8: Some example text detection results by our algorithm along with the original image. (A) is from [11]; (B) is from [18]; (C) is from [9].

- [1] Alajez, N. M., Eghtesad, S., and Finn, O. J. (2006). Cloning and expression of human membrane-bound and soluble engineered t cell receptors for immunotherapy. *Journal of Biomedicine & Biotechnology*, **2006**(2), 68091. PMID: 16883054.
- [2] Budeus, M., Salibassoglu, E., Schymura, A. M., Reinsch, N., Wieneke, H., Sack, S., and Erbel, R. (2007). Effect of induced ventricular fibrillation and shock delivery on brain natriuretic peptide measured serially following a pre-discharge ICD test. *Indian Pacing and Electrophysiology Journal*, **7**(4), 195–203. PMID: 17957267.
- [3] Chen, Y., Blackwell, T. W., Chen, J., Gao, J., Lee, A. W., and States, D. J. (2007). Integration of genome and chromatin structure with gene expression profiles to predict c-MYC recognition site binding and function. *PLoS Computational Biology*, **3**(4), e63. PMID: 17411336.
- [4] Dabney, A. R. and Storey, J. D. (2007). Normalization of two-channel microarrays accounting for experimental design and intensity-dependent relationships. *Genome Biology*, **8**(3), R44. PMID: 17391524.
- [5] Farge, G., Pham, X. H., Holmlund, T., Khorostov, I., and Falkenberg, M. (2007). The accessory subunit b of DNA polymerase gamma is required for mitochondrial replisome function. *Nucleic Acids Research*, **35**(3), 902–911. PMID: 17251196.
- [6] Fujimori, S., Washio, T., and Tomita, M. (2005). GC-compositional strand bias around transcription start sites in plants and fungi. *BMC Genomics*, **6**(1), 26. PMID: 15733327.
- [7] Hertle, R. and Schwarz, H. (2004). *Serratia marcescens* internalization and replication in human bladder epithelial cells. *BMC Infectious Diseases*, **4**, 16. PMID: 15189566.
- [8] Houde, M., Belcaid, M., Ouellet, F., Danyluk, J., Monroy, A. F., Dryanova, A., Gulick, P., Bergeron, A., Laroche, A., Links, M. G., MacCarthy, L., Crosby, W. L., and Sarhan, F. (2006). Wheat EST resources for functional genomics of abiotic stress. *BMC Genomics*, **7**, 149. PMID: 16772040.
- [9] Irimia, M., Rukov, J. L., Penny, D., and Roy, S. W. (2007). Functional and evolutionary analysis of alternatively spliced genes is consistent with an early eukaryotic origin of alternative splicing. *BMC Evolutionary Biology*, **7**, 188. PMID: 17916237.
- [10] Jang, H., Ma, B., and Nussinov, R. (2007). Conformational study of the protegrin-1 (PG-1) dimer interaction with lipid bilayers and its effect. *BMC Structural Biology*, **7**, 21. PMID: 17407565.
- [11] Kalisch, T., Wilimzig, C., Kleibel, N., Tegenthoff, M., and Dinse, H. R. (2006). Age-related attenuation of dominant hand superiority. *PloS One*, **1**, e90. PMID: 17183722.
- [12] Karhumaa, K., Sanchez, R. G., Hahn-Hgerdal, B., and Gorwa-Grauslund, M. (2007). Comparison of the xylose reductase-xylytol dehydrogenase and the xylose isomerase pathways for xylose fermentation by recombinant *saccharomyces cerevisiae*. *Microbial Cell Factories*, **6**, 5. PMID: 17280608.

- [13] Kim, J., Kang, Y., Kang, H., Kim, D., Ryu, G., Kang, M., and Seo, Y. (2005). In vivo and in vitro studies of mgs1 suggest a link between genome instability and okazaki fragment processing. *Nucleic Acids Research*, **33**(19), 6137–6150. PMID: 16251400.
- [14] Lelliott, C. J., Medina-Gomez, G., Petrovic, N., Kis, A., Feldmann, H. M., Bjursell, M., Parker, N., Curtis, K., Campbell, M., Hu, P., Zhang, D., Litwin, S. E., Zaha, V. G., Fountain, K. T., Boudina, S., Jimenez-Linan, M., Blount, M., Lopez, M., Meirhaeghe, A., Bohlooly-Y, M., Storlien, L., Strmstedt, M., Snaith, M., Oresic, M., Abel, E. D., Cannon, B., and Vidal-Puig, A. (2006). Ablation of PGC-1beta results in defective mitochondrial activity, thermogenesis, hepatic function, and cardiac performance. *PLoS Biology*, **4**(11), e369. PMID: 17090215.
- [15] Ma, J., Lee, K., Berra, K., and Stafford, R. S. (2006). Implementation of case management to reduce cardiovascular disease risk in the stanford and san mateo heart to heart randomized controlled trial: study protocol and baseline characteristics. *Implementation Science: IS*, **1**, 21. PMID: 17005050.
- [16] Nemes, A., Caliskan, K., Geleijnse, M. L., Soliman, O. I. I., Anwar, A. M., and ten Cate, F. J. (2008). Alterations in aortic elasticity in noncompaction cardiomyopathy. *The International Journal of Cardiovascular Imaging*, **24**(1), 7–13. PMID: 17334818.
- [17] Nicolas, P., Kim, K., Shibata, D., and Tavar, S. (2007). The stem cell population of the human colon crypt: analysis via methylation patterns. *PLoS Computational Biology*, **3**(3), e28. PMID: 17335343.
- [18] Nishinokubi, I., Shimoda, M., and Ishida, N. (2006). Mating rhythms of drosophila: rescue of tim01 mutants by d. ananassae timeless. *Journal of Circadian Rhythms*, **4**, 4. PMID: 16522214.
- [19] Nitharwal, R. G., Paul, S., Dar, A., Choudhury, N. R., Soni, R. K., Prusty, D., Sinha, S., Kashav, T., Mukhopadhyay, G., Chaudhuri, T. K., Gourinath, S., and Dhar, S. K. (2007). The domain structure of helicobacter pylori DnaB helicase: the n-terminal domain can be dispensable for helicase activity whereas the extreme c-terminal region is essential for its function. *Nucleic Acids Research*, **35**(9), 2861–2874. PMID: 17430964.
- [20] Padmavathi, B., Rath, P. C., Rao, A. R., and Singh, R. P. (2005). Roots of withania somnifera inhibit forestomach and skin carcinogenesis in mice. *Evidence-Based Complementary and Alternative Medicine: eCAM*, **2**(1), 99–105. PMID: 15841284.
- [21] Ponnappan, S., Cullen, S. J., and Ponnappan, U. (2005). Constitutive degradation of IkappaBalpha in human t lymphocytes is mediated by calpain. *Immunity & Ageing: I & A*, **2**, 15. PMID: 16271147.
- [22] Riley, M. C., Clare, A., and King, R. D. (2007). Locational distribution of gene functional classes in arabidopsis thaliana. *BMC Bioinformatics*, **8**, 112. PMID: 17397552.
- [23] Rizzon, C., Ponger, L., and Gaut, B. S. (2006). Striking similarities in the genomic distribution of tandemly arrayed genes in arabidopsis and rice. *PLoS Computational Biology*, **2**(9), e115. PMID: 16948529.

- [24] Schepens, B., Tinton, S. A., Bruynooghe, Y., Beyaert, R., and Cornelis, S. (2005). The polypyrimidine tract-binding protein stimulates HIF-1alpha IRES-mediated translation during hypoxia. *Nucleic Acids Research*, **33**(21), 6884–6894. PMID: 16396835.
- [25] Shingleton, A. W., Sisk, G. C., and Stern, D. L. (2003). Diapause in the pea aphid (*Acyrtosiphon pisum*) is a slowing but not a cessation of development. *BMC Developmental Biology*, **3**, 7. PMID: 12908880.
- [26] Styles, P. and Brookfield, J. F. Y. (2007). Analysis of the features and source gene composition of the AluYg6 subfamily of human retrotransposons. *BMC Evolutionary Biology*, **7**, 102. PMID: 17603915.
- [27] Tabatabai, M., Williams, D. K., and Bursac, Z. (2005). Hyperbolic growth models: theory and application. *Theoretical Biology & Medical Modelling*, **2**, 14. PMID: 15799781.
- [28] Tnnemann, G., Karczewski, P., Haase, H., Cardoso, M. C., and Morano, I. (2007). Modulation of muscle contraction by a cell-permeable peptide. *Journal of Molecular Medicine (Berlin, Germany)*, **85**(12), 1405–1412. PMID: 17717642.
- [29] Wan, Y. Y. and Badr, M. Z. (2006). Inhibition of Carrageenan-Induced cutaneous inflammation by PPAR agonists is dependent on Hepatocyte-Specific retinoid x ReceptorAlpha. *PPAR Research*, **2006**, 96341. PMID: 17259670.
- [30] Williams, A. E., Maskarinec, G., Franke, A. A., and Stanczyk, F. Z. (2002). The temporal reliability of serum estrogens, progesterone, gonadotropins, SHBG and urinary estrogen and progesterone metabolites in premenopausal women. *BMC Women's Health*, **2**(1), 13. PMID: 12498620.
- [31] Woody, O. Z. and Nadon, R. (2006). The shivplot: a graphical display for trend elucidation and exploratory analysis of microarray data. *Source Code for Biology and Medicine*, **1**, 6. PMID: 17147786.
- [32] Yang, R., Lee, M., Hu, H., Pollin, T. I., Ryan, A. S., Nicklas, B. J., Snitker, S., Horenstein, R. B., Hull, K., Goldberg, N. H., Goldberg, A. P., Shuldiner, A. R., Fried, S. K., and Gong, D. (2006). Acute-phase serum amyloid a: an inflammatory adipokine and potential link between obesity and its metabolic complications. *PLoS Medicine*, **3**(6), e287. PMID: 16737350.